The Newspaper of Information Systems Management
November 6, 1995, Vol. 29, No. 45, 172 Pages, $6/Copy, $48/Year

COMPUTERWORLD

Desktop drama

Users eye Microsoft as Novell moves to sell WordPerfect

By Laura DiDio and Cheryl Gerber

All roads now lead to Microsoft — at least as far as desktop suites are concerned.

That is the reality businesses may be forced to live with in the wake of Novell, Inc.'s decision last week to leave the desktop applications market, users and analysts interviewed said.

WordPerfect users are upset and ready to switch their allegiance to Microsoft Corp. (see related stories, page 163). Meanwhile, their NetWare-using peers are stoically staying the course and evaluating their options, though not without some trepidation.

Novell's decision to dump the desktop applications business comes just 16 months after former Chairman Ray Noorda acquired the Orem, Utah-based WordPerfect for $855 million. Noorda had hoped to fight Microsoft on its own turf.

But the WordPerfect acquisition proved too costly for Novell, observed Rich Edwards, a senior analyst at Robertson, Stephens & Co. in San Francisco. And so did its purchase of the Unix System V operating system in 1993, he said.

"Novell's divestiture of the UnixWare and WordPerfect ap-

Desktop drama, *page 163*

Inside



User confidence in WordPerfect drops as plans to switch to Microsoft start to rise. **See story, page 163, by Cheryl Gerber.**

Analysts back Novell's decision to dump WordPerfect and focus on networking. **See story, page 163, by Laura DiDio.**

Investors cheer Novell's plans. **See story, page 162, by Stewart Deck.**



Taming the E-mail shrew

By Mitch Betts and Tim Ouellette

Meet Jack Suess, associate director of computing at the University of Maryland in Baltimore County. He gets an average of 1,200 electronic-mail messages a week — and spends four hours a day just responding to them.

What's worse, the "E-mail overload" monster stalks him on weekends and during off-duty hours. "When I was on vacation, I was so afraid to come back and face 1,200 unread messages that I read my mail each day. I found I spent just under 30 hours on my vacation answering my E-mail," Suess recalled.

E-mail, *page 32*

Some 776 billion E-mail messages crisscrossed the globe last year, and that number is expected to hit 1 trillion this year, according to the Electronic Messaging Association in Arlington, Va. The EMA estimates companies will spend an average of $483 per E-mail user this year.

Which Windows and when?

By Julia King

Large corporations aren't ready yet to bet their businesses — or the client/server software on which they run them — on Windows NT Server, Microsoft Corp.'s network operating system and entry-point product for the enterprise computing market.

But the corporate desktop is an entirely different story. Here, Microsoft's Windows NT Workstation operating system is emerging as a darling of sorts, with many large companies skipping over Windows 95 to move directly to the more robust NT.

This year, Microsoft will sell 490,000 units of Windows NT Workstation, all of them to corporate users, according to estimates from International Data Corp. in Framingham, Mass.

COMPUTERWORLD SPECIAL REPORT — **Microsoft in the Enterprise** — *Part 1 of a two-part series*



Vanguard's Bob DiStefano *is considering switching his 4,000 desktops from OS/2 to NT*

Windows NT Server, Windows 95, Windows NT Workstation. Confused?

If so, consider yourself in the company of Microsoft itself, whose enterprise computing strategy is discombobulated, according to interviews with nearly a dozen of the large corporate clients Microsoft is targeting.

"I don't think Microsoft understands business information systems requirements ... and I'm a Microsoft fan," said Jon Ricker, vice president and chief information officer at $17 billion BellSouth Telecommunications in Atlanta. "For them to demonstrate that you can put a $17 billion business on Microsoft [technology] will take a huge amount of credibility that Microsoft doesn't have."

"You just can't have all of these platforms," said Allan Friedman, vice president of technology at Bankers Trust Corp. in New York. "To have them all and to also address the requirements for support becomes untenable."

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Inside Computerworld

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3Com and Cisco detail Rmon plans

By Bob Wallace

Internetworking industry leaders 3Com Corp. and Cisco Systems, Inc. last week detailed plans for Remote Monitoring technology, which helps users detect potential problems in switched networks before they crash.

3Com and Cisco will offer Rmon "agents" that pass important management data to specially designed Rmon management applications. The process will help users spot and solve problems as well as plan for network growth.

While the Rmon agents pass data from each port on a switch to the management applicatinn, stand-alone monitoring devices called Rmon probes can be attached to the links between switches and perform the same function.

3Com and Cisco are building Rmon agents in to their switches as a standard feature, but users must buy the Rmon probes separately. Network administrators can use the probes on each LAN segment as needed while they wait for built-in Rmon agents for each port for their switches.

But this interim solution is unpopular with users and analysts.

"I'd much rather have agents built in to the switches, primarily because stand-alone probes cost a fortune," said Don Vary, a senior network specialist at Great West Life & Annuity Co. in Englewood, Colo. "And we'd need so many that we wouldn't have enough floor space for them all."

Too many limitations

Analysts said achieving Rmon via LAN segment probes doesn't give users adequate flexibility.

"Often users encounter network problems, and if they don't have probes on every segment, [they] have to physically move probes from LAN segment to LAN segment until they find the problem," said Skip MacAskill, a senior research analyst at Gartner Group, Inc. in Stamford, Conn. "That's a nightmare in large networks."

Nine different groups of data can be generated by the Rmon agents (see chart). An emerging specification, Rmon2, will let users apply Rmon groups against applications, a highly desired capability.

"With Rmon, I could see what percent of my network traffic is from Telnet, [file transfer protocol] and [electronic-mail] applications," Vary said. "That would help me decide where to locate E-mail and application servers and plan for future network expansion."

Vary uses Rmon agents built in to his Cisco Catalyst 1200 switches. He also uses Rmon probes on the Fiber Distributed Data Interface links between the switches and a special Rmon management application from Frontier Software, Inc. in Chelmsford, Mass., to view the data.

Cisco will work with Frontier to add Rmon agents to Catalyst 1600 and the higher-end Catalyst 5000 switches in the first quarter of next year.

Cisco next month will ship a line of SwitchProbes, Rmon probes for switched links. They will cost $3,500 to $19,000 each.

3Com has launched a broad toitiative whereby it will build Rmon agents into its switches and switches from Chipcom Corp. The agents will support several of the Rmon groups.

Rmon recipe

The following components make up Rmon.

STATISTICS – Packet size, collisions, errors

HISTORY – A long- or short-term look at statistics

HOST TABLE – A list of hosts on the network

HOST TOP N – User sets a variable, such as Top 5 talkers exchanging data on the network

TRAFFIC MATRIX – A list of conversations between devices

ALARMS – Alarms will sound if an action goes above or below a set level

FILTERS – Decides what packets to look at

PACKET CAPTURE – Decides how to catch these packets

EVENTS – A log of all events, such as alarms with description/time

Alpha to get Notes port

By Suruchi Mohan

Lotus Development Corp soon will announce plans to port Notes, its groupware application, to Digital Equipment Corp.'s Alpha platform for Windows NT and Unix, according to sources close to both firms.

Notes for Alpha on Microsoft Corp.'s Windows NT will be released in the first half of next year, and the Unix version will be released in the second half, according to an internal Digital memo. The planned port underscores Lotus' intent to remain platform-independent and Digital's efforts to play systems integrator.

"One of the problems with Notes has been performance," said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston. Porting to Unix on the 64-bit Alpha should result in "screaming performance," he said.

Tony Ioele, president of Ioele Griggs & Associates, Inc. in Exton, Pa., agreed. He said he was surprised that the port had been resurrected, but he said it would "extend the scalability of Notes, which has been a concern of ours and the user community."

A port to Digital's Unix on Alpha would be a good alternative, Sloane explained, because Notes can be extremely resource-intensive and chew up a lot of CPU cycles. Cambridge, Mass.-based Lotus also could use Large-Scale In-Memory Database technology, which supports several gigabytes of main memory. With this technology, Notes could be held in memory instead of on disk. The result would be even faster processing.

> "Companies want to do business with Digital again"
>
> Tim Sloane
> Aberdeen Group

Lotus also will port Notes to the AS/400 platform, as part of its overall drive to be open. There also would be gains in speed on the NT side. Although Lotus wouldn't be able to use Large-Scale In-Memory Database technology with NT, it could get a leg up on the competition by working with Digital on its clustering capability. This would let multiple NT systems work together as one, allowing support for more concurrent users than is possible with a single processor, Sloane said.

Microsoft is likely to use this technology with Exchange as part of its agreement with Digital to introduce Exchange into large Digital sites, Sloane said.

Ioele said this is a smart move for Digital. "Another leading application is being ported, which validates Alpha as a hardware platform," he explained. This also will support Digital's role as a systems integrator, Ioele said. He predicted the only people who will stay with Digital's All-In-1 are those with character-set terminals. Digital and Lotus would neither confirm nor deny the story.

In interviews last week, three users offered lukewarm support. One user at a large Notes site with multiple hardware platforms, who requested anonymity, said he hoped Lotus would provide more resources to support the platforms it adds.

"At Lotusphere, they promised that all platforms would be released simultaneously, but that's not true. If they add more platforms, then the release date for all platforms might be moved further into the future," he said.

CompuServe plans switch to ATM

By Bob Wallace

On-line information provider CompuServe, Inc. is expected this week to announce a sweeping big-ticket overhaul of its global network to provide users with cheaper and faster access to network services, *Computerworld* has learned.

CompuServe, which also provides high-speed international data services such as frame relay, will spend more than $10 million on high-speed Asynchronous Transfer Mode (ATM) switches from StrataCom, Inc., a carrier switch vendor.

ATM technology

CompuServe and StrataCom confirmed plans to make a joint announcement this week but didn't provide further details.

The move comes just one week after two major Internet providers — UUNet Technologies, Inc. and Netcom On-Line Communications Services, Inc. — announced plans to migrate to ATM-based networks.

The move to ATM networks gives the providers a way to dramatically cut their wide-area network costs by aggregating traffic from countless links onto a few high-speed trunk lines.

And that makes their networks easier to monitor and manage.



Northeast Utilities' John Boyd *says ATM will prepare CompuServe for the future*

Industry sources, who requested anonymity, said CompuServe will buy a large number of StrataCom's Broadband Packet Exchange (BPX) switches, its high-est-end switch, to anchor CompuServe's global network.

Users lauded CompuServe's undertaking. "They're taking the right steps by building an ATM infrastructure," said John Boyd, chief network technologist at Northeast Utilities in Hartford, Conn.

"The switches will let CompuServe support higher-speed Internet and frame-relay access. And ATM can be the enabling technology for future [offerings] such as a videoconferencing service based on video servers in the CompuServe network," he said.

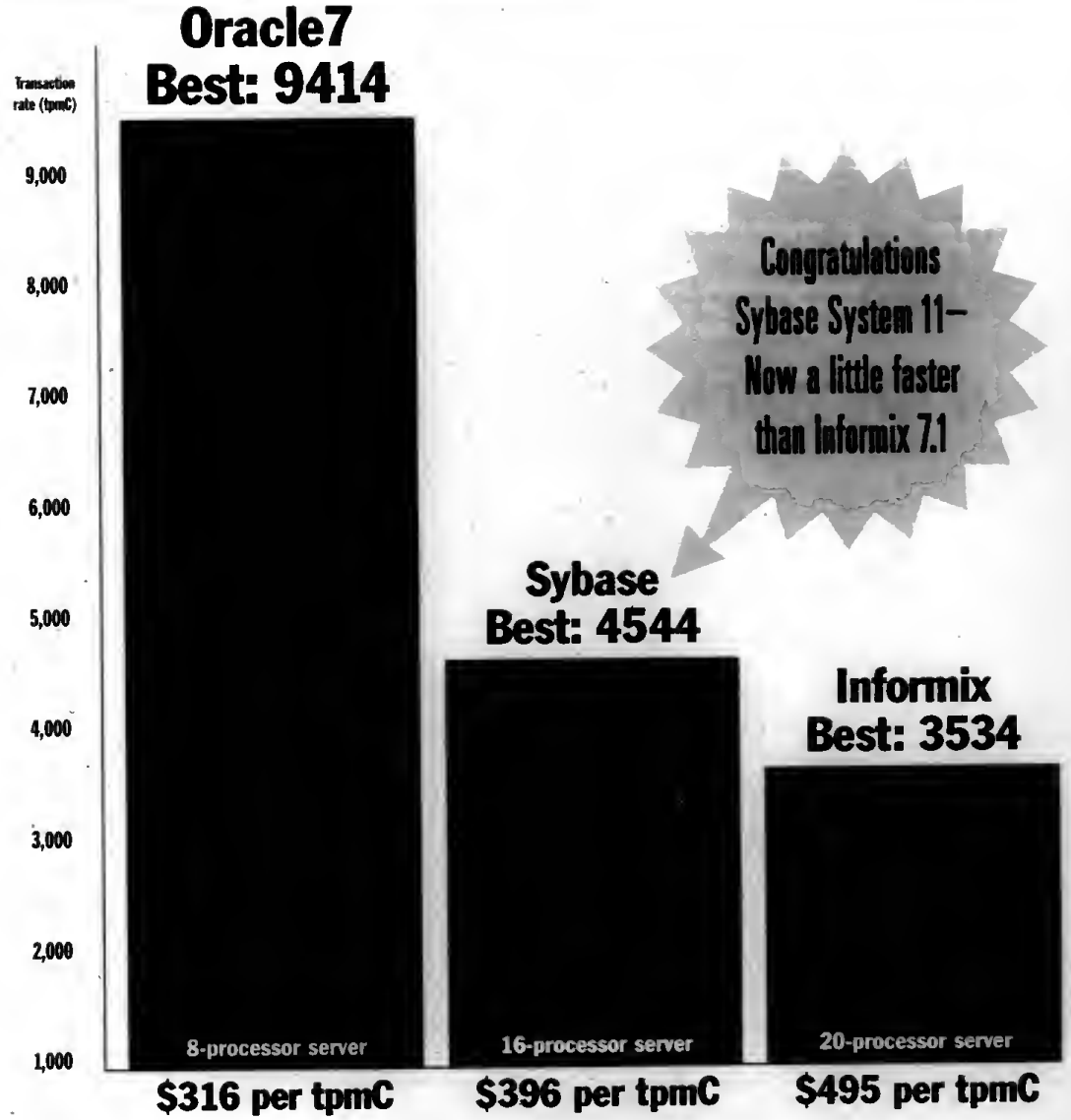
The StrataCom BPXs will enable the CompuServe network to support higher-speed access pipes and higher data traffic — not to mention 45M and 155M bit/sec. trunks between switches.

Its smaller switches used now support only 1.544M bit/sec. links.

"The BPXs will let CompuServe more easily and much less expensively scale its network," said Beth Gage, a broadband consultant at TeleChoice, Inc., a consultancy in Verona, N.J.

"It was just a matter of time before CompuServe outgrew the IPXs like AT&T and WilTel did. This is a very positive move," she said.

Oracle7: Faster, Cheaper, Better



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Oracle execs bolt for start-ups

By Dan Richman

Three senior executives nt Oracle Corp. resigned in the past two weeks to join or create other companies, and another less-senior official also left the database maker. There is "absolutely no connection between the departure of these guys," said Margaret Lasecke, Oracle's senior director of public relations.

Evan Goldberg, n vice president for business development at that division, resigned last Friday. He said be will lead his own start-up, Embed Teebnology Co. in San Francisco, thnt will mannfacture tools to develop multimedin applications for the World Wide Web

Joseph C. Pistritto, formerly Oracle's vice president of Internet products, left last Friday to become vice president of networkingnt PointCast, Ine., n Cupertino, Calif., manufacturer of tools for distributing and displaying internet information

Jay Verkler, formerly senior director of Oracle's mobile systems group, also quit last Friday, saying be will start a company or join a start-up active in client/server or systems managemeot software

Farzad Dibachi, executive vice president of the New Medin division, resigned Oct 26 to start n company called Diba, Inc nt nn undetermined location in Silicon Valley. He will design hardware and software

"What may be happening here is the unwioding of [Oracle's] interactive television/video-on-demsnd strategy," snid Mnrk Stahlmao, president of New Media Associates, Inc., n media research and financial services firm in New York.

War of the workstations

HP fires back at Sun in competitive Unix midrange market

By Jean S. Bozman

On the eve of Sun Microsystems, Inc.'s biggest workstation announcement in years, rival Hewlett-Packard Co is about to counterpunch this week with a new flagship Unix workstation to replace its midrange HP 9000 Model 735, *Computerworld* has learned.

The escalating competition in the Unix midrange, where systems range in price from $20,000 to $40,000, pits the world's two largest Unix workstation vendors against each other to deliver high-performance units nt lower cost.

At the same time, Sun nnd HP are looking over their shoulders at Intel Corp.'s high-speed Pentium Pro. That is because users might be tempted to buy low-cost Microsoft Corp. Windows NT-based systems instead of Unix workstations.

"This whole [workstation] marketplnce is going to go crazy [next year] because of the wild card with Intel and NT," said Peter Lowber, a senior analyst at Datapro Information Services Group tn Lexington, Mass. He said Intel's floating-point performance can compete with Unix vendors' RISC chips.

Sun will revamp its whole line with powerful 64-bit chips (see chart below), starting with three new models that will be introduced tomorrow [CW. Oct. 30]. HP will announce two C-class models as 32-bit placeholders that users can upgrade with 64-bit ebips next year, annlysts said. HP's 64-bit chips will double performance, but the upgrade also may add from $5,000 to $10,000 to C-class prices, Lowber said.

Pentium, NT looming

Still, the market is broadening beyond the two vendors that sell more than half the world's workstations, analysts warned.

"HP and Sun are good competitors that know each other's market strengths and how each does business," said John Logan, vice president at Aberdeen Group, Inc. in Boston. "But they don't know how to compete against Pentium Pro and NT. Both companies are trying to quickly move up to the 64-bit architecture before 32-bit Pentium Pro and NT [Workstation] move into their space."

Mennwhile, users who bought HP's J-class deskside multiprocessor workstations have been expecting n desktop version ever since the machines shipped with 32-bit PA-RISC 7200 chips in June. "This is like the other shoe dropping," said Doug Eltoft, director of operations nt the Uoiversity of Iown's College of Engineering in Iowa City.

The engioeering college last week installed its J210 deskside workstatioo as a computing server for scientific npplications. But the desktop machine could be used in researchers' offices as a personal machine, Eltoft added.

HP's J-etass deskside workstations, with one or two processors, cost between $30,000 nnd $50,000.

Sun users get a new version of DCE via Transarc. See page 59.

Sun's Ultra product line

Sun Microsystems' 64-bit UltraSPARC workstation line will be announced this week and is expected to include the following components:

Model	Ultra 1	Ultra 1 Creator, Creator 3D	Ultra 2 Creator, Creator 3D
Type nf system	2-D uniprocessor	2-D, 3-D unIprocessor	2-D, 3-D unIprocessor
Chip	143-MHz UltraSPARC I	167-MHz UltraSPARC I	167-MHz UltraSPARC I

Price range: **From $27,000 to $59,995** Availability: **Ultra 1 and Ultra 1 Creator immediately; Ultra 2 units in Q2 1996.**

All units include the Solaris 2.5 Unix operating system, which supports up to 64 processors; the Common Desktop Environment Unix interface; and Version 3 of the Network File System.

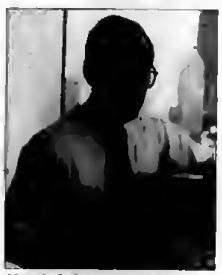
Alcoa remakes IS strategy with HP

Will link 15,000 boxes worldwide in $150M contract

By Jaikumar Vijayan

Alcoa, one of the world's largest manufacturers of aluminum and aluminum products, is recasting its informntion technology operations into a new mold.

The Pittsburgh-based company has inuoched a five-year, $150 million outsourcing project with Hewlett-Packard Co. The project is aimed at standardizing client/server platforms, reining in long-term costs and improving communications with customers and soppliers.



Alcoa's Robert Cosgrove: *'The idea is to be decentralized, not disconnected'*

When complete, the two-year project — called the Common Infrastructure Initiative — will link 15,000 computers in n vast standard client/server network spanning 26 countries.

"We are treating this whole thing as mission-critical infrastructure development," said Robert Cosgrove, Alcoa's information systems director.

Part of the plan

Under the project, which is its largest outsourcing eogagemeot, Alcoa will doploy 10,000 workstattons running Microsoft Corp.'s Windows NT operating system and Office applications suite and 450 servers running Windows NT and BackOffice.

The company will completely skip Microsoft's Windows 95 as either n desktop or server platform and stick with NT because it is more robust and secure, Cosgrove said. BackOffice was chosen primarily for its systems management services component, which Alcoa will use for remote administration and remote delivery of software.

Microsoft's Exchnnge Sever will be the standard electronic-mail and messaging package.

HP will provide project management through the implementation phase as well as hardware configuration, delivery and ongoing support — including a help desk — for Alcoa businesses worldwide. Microsoft will help in the overall system design and implementation of Exchange.

"There definitely is a growing trend for companies to outsource distributed systems management functions. Outsourcing happens when companies realize that information technology is an asset that needs to be managed by an expert," said Allie Young, an annlyst nt Dataquest, Inc. in Framingham, Mass.

The impetus for the massive effort comes primarily from the poor communication between the company's various locations. That was a result of n multiplicity of hardware, operating systems and npplication software — not to mention buman factors, Cosgrove said.

"Like so many global companies, Alcoa is highly decentralized in terms of management, but we also got far too disconnected," he snid. "Things like sharing of best practices, for instances, just stopped happening" between the different global units.

But a lot of that will disappear with the new system, Cosgrove said. Technical goals of the project, which were defined by managers from Alcoa units, include the following:

- A common desktop platform to simplify administratioo and reduce costs through volume purchases.
- Standardized client/server software to ensure thnt documents can be exchanged globally without eonversions.
- Better communication with key customers and supptiers vis new E-mail links.

When fully implemented, the system will allow Alcoa to deploy strategic business initiatives with significantly less lead time across different locattons.

In the project's first phase — to be completed by June 1996 — 250 HP servers will be installed, 4,000 PCs will be replaced or upgraded and the HP help desk will be activated for U.S. locations.

Client/server price tag: 40% of IS dollars

By Cheryl Gerber

If the focus of last week's Technology Managers Forum conference is any indication, client/server computing is edging out from the departmental level and into the broader corporate enterprise.

Companies including IBM and the Windows Support Group introduced or demonstrated products and services that could extend the upward reach of client/server applications by integrating systems and providing desktop-to-database links, for example.

"Client/server computing is aligning more with business needs and goals now," said Jackie Germany, manager of enterprise networks at World Color Press, Inc. in New York and a panelist at the conference. "We're asking, 'How do we leverage what we've done while preparing to go forth with new implementations?'"

Big bucks

Sample cost for a Windows 95 upgrade

TRAINING	$4,200
INSTALLATION	$350
ADDITIONAL SUPPORT	$1,800
HARDWARE AND WINDOWS 95	$11,575
Total per machine	$17,925

Source: Horizons Technology, Inc., San Diego

A survey of Technology Managers Forum members conducted by IDG Research for *Computerworld* in July showed that most forum members have a median of 11 client/server applications in production. They are looking for tools and services to move those applications beyond the departments in which they were created and into the enterprise, said Priscilla Tate, president of Technology Forum, Inc.

The survey on client/server costs found that 40% of information technology dollars are spent on client/server application development, deployment and support. And once other infrastructure costs — such as hardware, systems software and networking gear — are included, client/server expenditures rise to 60%. In general, information technology spending is about 2% of a company's overall gross revenue.

On tap

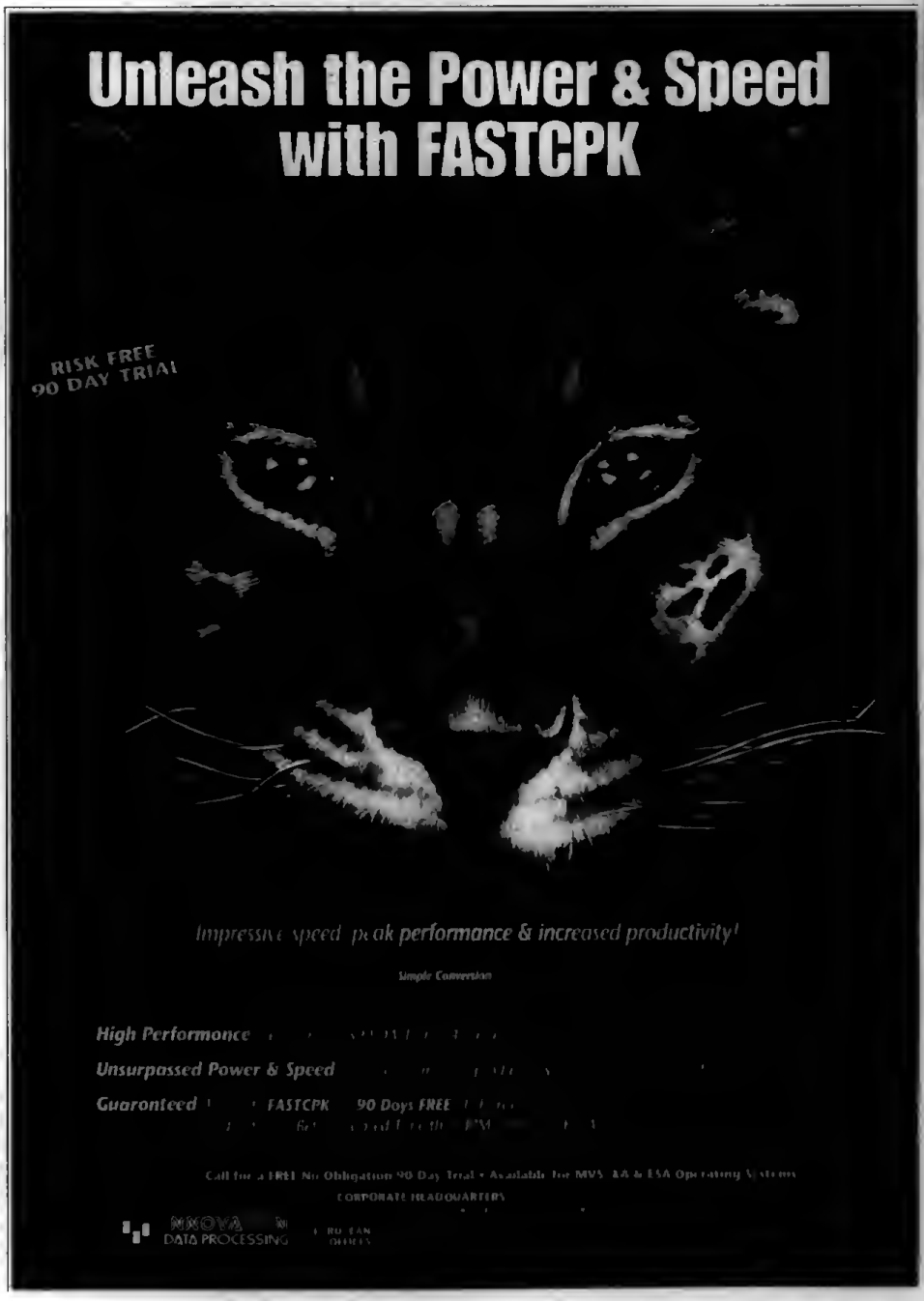
Products and services highlighted at the show included the following:

- **Horizons Technology, Inc.** unveiled the results of Windows 95 upgrade data gathered by an applet in its forthcoming LANauditor 3.10 product. The applet, called Windows 95 Migration Tool, takes data collected by LANauditor and presents a model for calculating required hardware and software upgrades as well as operations costs. LANauditor 3.10 is scheduled to ship in December.

  Paul Hunt, manager of Horizon's network technology division, said the migration data he collected using the applet showed that the highest costs of moving to Windows 95 were those of training and hardware and software upgrades.

  "The demands by Windows 95 on hard disk drives and RAM are significant," he said. For example, baseline RAM requirements are in the neighborhood of 12M bytes or higher, and disk drive requirements are at least a half a gigabyte per station, he said.
- **The Windows Support Group** in New York introduced and demonstrated TimeKeeper Release 3.0 for Windows, a business accounting system for tracking and billing time. It also introduced TimeKeeper Project Link, which allows users to link TimeKeeper to Microsoft Corp.'s Project. Both products are scheduled to ship by the end of the year.
- **IBM** announced a Client/Server Integration Specialist program that certifies IS professionals in client/server implementation.

Up-To-Date for Windows 95 needs a network connection. See page 48.



More musical chairs unseat Apple's Eilers

By Lisa Picarille

Apple Computer Inc.'s latest shake-up has led to the exit of another key executive, but the company hopes its new decentralized marketing efforts will help get products to users more quickly.

Daniel L. Eilers, a major force behind Apple's attempt to boost dwindling market share, abruptly resigned last week on the eve of yet another restructuring at the Cupertino, Calif.-based computer maker. The latest revamp decentralizes the marketing effort.

Response time

Apple hopes this approach will help the company deliver hardware and software products faster to users in each region and respond more quickly to their specific needs.

"Anything that makes Apple more responsive and timely to market is OK with me," said Mark Munro, a systems analyst at Jack Morton Productions, Inc., a New York-based marketing and sales promotion company with hundreds of Macintoshes.

Some industry watchers said they think the loss of Eilers, who was senior vice president of Apple's worldwide marketing and customer solutions organization, is a blow for Apple. Eilers had helped devise the restructuring plan, which divides marketing responsibility into three geographic regions worldwide.



Daniel Eilers, *former head of Apple's worldwide marketing, was a top problem-solver, Apple watchers say*

Eilers' departure closely follows the recent resignation of Joseph Graziano, Apple's chief financial officer.

Graziano reportedly resigned after a failed effort to persuade Michael Spindler, Apple's president and chief executive officer, to sell or merge the company. Spindler's decision for the company to continue on its own was endorsed by Apple's board.

"I think it is regrettable. Eilers was good for Apple," said Chris Le Tocq, president of SoftTracks Software Research, a market research firm in Los Altos, Calif. "He brought a software perspective to a company that was thinking about speeds and feeds for far too long. Eilers also brought a very strong focus on specific segments of Apple's market. All of that was really good for users."

Other Apple watchers said Eilers' primary focus was as a marketing problem-solver and that he had accomplished his goals at Apple.

Eilers, a 12-year Apple veteran, was highly regarded inside and outside of Apple and often touted as a possible replacement for Spindler. But despite Wall Street analysts' high opinion of Eilers, most said they don't expect his departure to have negative repercussions for the company.

Slate of flashy Macs target consumer market

By Lisa Picarille

At last week's Macromedia International Developers Conference & Exposition in San Francisco, Apple President and Chief Executive Officer Michael Spindler wowed the crowd with prototypes of four innovative consumer-oriented Macintoshes.

Each of the unique new Macintoshes — which will feature a PowerPC processor — offer home users a highly stylized, sleek-looking system that takes up a minimum of space yet offers a variety of technologies, including a computer, telephone and television monitor.

The Designer Macs, as they are called within Apple, feature alternative materials, such as plastic, wood and metal, and target users who often purchase expensive stereo equipment. Some of these systems cost upward of $4,000, and most won't be available until late 1996 or 1997.

Systems demonstrated included the following:

- A home entertainment center with a large flat-panel display that can be used as a monitor or TV set. The large black box sports function controls directly on the monitor, with speakers mounted on the side of the monitor. It also features a small, ergonomic keyboard made of plastic and wood and a separate telephone.
- A system targeted at mobile workers. About the size of a stenographer's notepad, it was designed to hang from the user's neck. It incorporates a digital camera, wireless phone and Newton-like message pad that runs note-taking applications and recognizes handwriting.
- A highly stylized, very thin Macintosh that has flat, curved speakers as well as a small keyboard.
- And as a tribute to Apple's wildly popular all-in-one Macintosh SE of the late 1980s, Spindler demonstrated an updated version that was only about 15 inches high and 2 inches deep and offers a separate telephone and answering machine. Spindler claimed this system would be "perfect for a kids' den or in schools."

Apple's Copland operating system may not be out on time for some users. See page 45.

News Shorts

Syncronys responds to SoftRAM 95 blunder

The National Software Testing Laboratories recently found that SoftRAM 95 — a top-selling PC software product that supposedly doubles memory performance on Microsoft Corp.'s Windows 95 machines — does nothing of the kind. So last week, Syncronys Softcorp, Inc. in Culver City, Calif., began shipping "relabeling" stickers for SoftRAM 95. The stickers will cover the spot on the software package that claims it can double memory performance on Windows 3.1 and Windows 95 machines. Now the sticker claims that capability exists only for Windows 3.0 and 3.1. A spokesman said Syncronys had experienced bugs in its product's RAM compression on Windows 95, but he said a December bug fix will enable the product to work with Windows 95.

Compaq hits Pentium snag

Compaq Computer Corp. seems to be flip-flopping on its Pentium Pro strategy. A day after it announced a range of desktops using Intel Corp.'s new Pentium Pro processor, the Houston-based PC giant confirmed it will delay those products because of potential problems the chip might have in networked environments. Intel confirmed the problem but said it was a system-level issue and not a glitch with the chip.

Apple improves Newton

Apple Computer, Inc. hopes a major update to its Newton operating system will help the slow-selling personal digital assistant break free from gravity's grip. Newton 2.0 will feature better handwriting recognition; improved communication, such as the ability to receive faxes; more tightly integrated applications; and better connectivity features. Newton 2.0 is scheduled to ship Dec. 1 and will run on the Newton MessagePad 120.

AST signs up Diery

Beleaguered PC maker AST Research, Inc. in Irvine, Calif., named Ian Diery, former executive vice president of Apple, as its new president and chief executive. The move comes as AST announced a fifth consecutive quarterly loss, of $96.4 million on revenue of $403.4 million, for the quarter ended Sept. 30.

Low-end ThinkPads released

The **IBM PC Co.** this week will announce a low-end business notebook line. The ThinkPad 365 series will start at $1,999 for a notebook that includes a DX4 processor, a 540M-byte hard drive and 8M bytes of RAM. Prices top out at $3,099.

DB2 for NT coming

Later this month, **IBM** will ship a version of its DB2 relational database for Microsoft's Windows NT operating system. DB2 for Windows NT includes triggers, stored procedures, row-level data locking and gateways to DB2 on mainframes and AS/400s (see related story, page 88). The single-user price is $369.



Red Brick builds new house

Red Brick Systems, Inc. in Los Gatos, Calif., will ship Version 4.0 of its Red Brick Warehouse relational database management system on Dec. 4. Its major new feature is TargetIndex, a type of bit-mapped index that reportedly lets users get quick results from queries against fields with only a few possible values, such as gender, marriage status and ethnicity.

Security hole found in Telnet

The Computer Emergency Response Team at Carnegie Mellon University in Pittsburgh last week warned of a security hole in Telnet daemons that support RFC 1408 and RFC 1572 and shared object libraries. The vulnerability allows a computer user to bypass the normal log-in and authentication scheme as well as gain root access to a targeted system. Details and vendor-by-vendor status are available on the Internet. The address is the following: ftp://info.cert.org/pub/cert_advisories/CA-95.14.README.

SHORT TAKES **Sun Microsystems, Inc.'s** SunSoft subsidiary announced Solaris 2.5 last week.... **Dell Computer Corp.** in Austin, Texas, agreed to drop patent claims on the VL-bus used in 1.4 million PCs in order to settle **Federal Trade Commission** charges of unfair competition.

Boeing Takes Off With The Flying Dutchmen



The Boeing Commercial Airplane Group took off with the 777 this year; they also took off with the Baan Company. About to make a major process redesign commitment, they invited in "The Flying Dutchmen" from Baan Company. The result: Boeing placed an initial order valued at $20 million for Baan's TRITON family of client-server finance, manufacturing, distribution, transportation, service and project management applications.



If you are about to make an ERP decision, Baan's Flying Dutchmen would be delighted to introduce you to a significantly new perspective. One shared by ABB, Hitachi, Mercedes-Benz, Philips, Snap-On Tools and ... oh yes ... by Boeing. The worst that can happen is that you'll get a free hat commemorating Boeing's taking off with Baan. Call Baan at 800-889-9818, ext. 1001. Then clear a landing spot, along with some time on your calendar.

BaaN

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The Flying Dutchmen

TRBA

PeopleSoft fixes password security flaw

By Julia King

PeopleSoft, Inc. this week will issue a maintenance release that bolsters the security of its client/server applications. Specifically, the new release lets users encrypt the master password that is used to access the database of all PeopleSoft applications.

The company also disclosed to *Computerworld* a joint development and marketing alliance with Open Horizon, Inc., whose network and systems software is based on sophisticated Kerberos security technology.

Under the agreement disclosed last week, PeopleSoft will integrate Open Horizon's Connection Database Single Sign-On services with its applications. With this technology, all passwords are stored on a Kerberos server instead of an unsecured PC client. Users sign on once for all applications. The technology is slated to be delivered in March.

Both actions come on the heels of a First Albany-Meta Technology Research report that spotlights what First Albany analyst David Thomas called "serious security flaws" in PeopleSoft's client/server architecture.

First Albany-Meta Technology Research is a joint venture of First Albany Corp., an investment firm in Albany, N.Y., and Meta Group, Inc., a technology consulting firm in Stamford, Conn.

At issue was PeopleSoft's use of an unencrypted master password for database access.

Thomas said the password is highly vulnerable to intrusion because it resides in PC memory on the client side of the system and travels a network in unencrypted form.

"Within Microsoft's Windows application development kit, there are utilities that allow you to read memory. You could get access to that master ID, which is, in effect, the keys to the kingdom," Thomas said.

Quick look

Vendor: PeopleSoft, Inc., Pleasanton, Calif.
Annual revenue: $113 million
Number of installations: 700-plus
Platforms supported: Unix, Windows NT, OS/2, VAX/VMS, Alpha OpenVMS

The company announced support for SQL Server 6 in June, with delivery expected by the end of the year.

A first for everything

Yet, after seven years in business, this hasn't happened at any PeopleSoft customer site, according to John Cate, a spokesman for the Pleasanton, Calif., software vendor.

Cate said a user first brought the problem to the company's attention in mid-September. He said the company already was working on a fix before the First Albany report was released last month. Thomas, who wrote the report, never contacted PeopleSoft before issuing it, Cate said.

Several PeopleSoft customers said they don't regard the issue as a huge security threat.

"We saw it as a problem, but not a big problem," said Linda Keller, a senior systems analyst and security expert at Dow Chemical Co. in Midland, Mich.

"From my perspective, it is really no different than virtually any other client/server software," added John McCarthy, manager of information security at York University in Toronto. McCarthy said the university already uses an Open Horizon product that provides end-to-end encryption of passwords.

Baan tailors its client/server software to automotive users. See page 87.

EcoTOOLS

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Keeping client/server environments in balance so your applications don't take a dive.

Compuware EcoTOOLS maintains that critical balance you need for database, network and operating system elements to get along swimmingly across your client/server environment. In fact, Compuware EcoTOOLS is the *only* fully distributed systems-management solution to focus on the sustained well being of your applications in UNIX, Sybase or Oracle client/server systems.

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Micro Focus Challenge 2000 Program

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Reporter's Notebook

Sliced bread's got nothing on the Internet.

Standing-room-only sessions, long inneh lines and shuttle buses crammed full of the cybercurious made last week's **Internet World** show in Boston a pseudo-Comdex.

"A true phenomenon" is how one **CommerceNet** official described Internet usage after releasing results of an extensive survey conducted this summer with New York-based partner Nielsen Media Research.

Internet users top 24 million, according to the poll, with 18 million of those described as regular World Wide Web users. Further, 14% of Web users, or 2.5 million people, said they recently bought a product or service on-line.

*****

Meanwhile, attendees couldn't get enough of **Netscape Communications**. The Mountain View, Calif., vendor's booth teemed with spectators during most of the three-day exhibition. Netscape showed upcoming versions of its Navigator browser and Web development tools.

*****

AT&T launched Business Network, a Web-based on-line service geared toward corporate rather than home users.

A promotional offer good through December gives subscribers 10 hours of access for a monthly fee of $29.95. After Dec. 31, the fee is $39.95 per month

*****

Fairfax, Va.-based **UUNet Technologies** announced Internet 9-5, a suite of services to connect **Novell** NetWare users to the Internet priced at $130 to $215 per month.

*****

Elsewhere, IBM led a group of 30 vendors that banded together to protect intellectual property and enforce copyrights on the Internet. The Electronic Rights Management Group includes The Associated Press, Folio Corp., Netscape and States News Service, among others.

Although the group has so far agreed on little more than to reconvene in January, IBM has already offered to be a clearinghouse for tracking and controlling the use of copyrighted works via "cryptolope" technology. That involves putting material in encrypted envelopes that people can unlock only with special — and paid-for — keys.

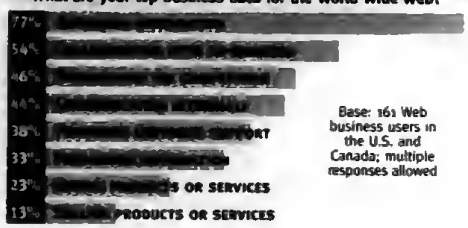
*****

Finally, one wag reminded Internet naysayers of some not-so-sage words uttered at the start of another revolution. According to Digital founder Ken Olsen in 1977, "There is no reason for any individual to have a computer in his home." Better yet, IBM's Thomas Watson told the world in 1943, "I think there is a world market for maybe five computers."

— Kim S. Nash

Web woven for business

What are your top business uses for the World Wide Web?



Base: 161 Web business users in the U.S. and Canada; multiple responses allowed

Source: CommerceNet, Menlo Park, Calif.

IBM Notes plan lacks specifics

By Kim S. Nash
and Craig Stedman
BOSTON

IBM was long on vision but disturbingly short on detail last week when it unveiled plans to rework parts of Notes, users and analysts said.

IBM plans to let the groupware package share data with mainframes and other legacy systems as well as publish information to the World Wide Web.

The goal of the project, codenamed Spike, is to create a software bundle that includes the forthcoming InterNotes 2.0. That version of Notes has links to the Web, Web servers and gateway services for IBM MVS mainframes, AS/400 minicomputers and other IBM systems.

Users would, for example, be able to have a Notes application grab data from a mainframe DB2 database and post it to the Web. Right now, that scenario requires manual coding of homespun middleware.

Big money

IBM declined to specify an exact ship date for Spike beyond sometime in 1996, and pricing was unavailable. Priced separately, the products would run a pretty penny (see chart).

While the Spike project addresses some of the Web wants of Notes users, analysts said the strategy isn't likely to attract newcomers to Notes. That is because over the long haul, the very tasks Notes and Web companion InterNotes 2.0 aim to accomplish — such as electronic mail and groupware — will likely be usurped by the less expensive Internet, said John Robb, an analyst at Forrester Research, Inc.

"Where's the economic impetus for people who don't currently use Notes to buy it, install it and set up a very expensive network for it when they can largely do the same thing on the Web for less money?" Robb said.

IBM apparently recognizes the problem. It has hedged its bets by gradually introducing a separate line of Web servers for its various PC, midrange and mainframe platforms that don't include Notes. For example, last month the vendor unveiled two Web servers for RS/6000 users [CW, Oct. 16].

Novell, Inc. must contend with a similar issue by peddling its GroupWise groupware product on one hand and separate Web servers for NetWare on the other, said Stan Lepeak, an analyst at Meta Group, Inc.

For current Notes users, however, the interlocking parts of the Spike software would replace much of the manual coding users must now write to get the disparate systems talking to one another, IBM said.

Internet access to the mainframe "would give us another whole dimension on how to use our databases," said Carl Gerberich, vice president of information services at Marist College in Poughkeepsie, N.Y.

But Gerberich and other IBM users, accustomed to the warm security of MVS, said they aren't convinced the Internet is a safe place to do business.

"The problem right now is that there's no privacy on it. That's scary," said Woody Woodard, director of computer operations and technical services at The Home Depot, Inc. in Atlanta. For now, The Home Depot is looking at building "an internal internet that we can contain within our own company," he said.

Open Market bundles 'net service and support. See page 76.

IBM's Internet agenda

To complement its Web server and browser software, IBM plans to offer middleware that connects old-line legacy applications to the brave new Internet

Middleware	Price
Internet Connection Server for MVS	$49 to $220 per month
InterNotes Web Publisher 2.0	$6,589
Internet Connection Secure Server (Shipping next month)	$2,999 for OS/2 $4,999 for AIX
WebConnection service for OS/400	Included in standard OS/2 service package

Internet data collector bows

By Michael Fitzgerald

A new product from Aurum Software, Inc. aims to make it easier for companies to use the World Wide Web as a marketing tool.

At Internet World in Boston last week, the Santa Clara, Calif.-based company announced its WebTrak-Internet Marketing Module. The database front-end tool takes data entered by Web site visitors and automatically sends it back to the corporate database. It runs on Web servers from Netscape Communications Corp. and Oracle Corp.

"This lends competitive advantage to both Aurum and its customers," said Judith Hodges, an analyst at International Data Corp.

Hodges said WebTrak should shorten corporate selling cycles because it eliminates steps such as entering sales leads into the system. Internet-enabled sales force automation software will make for a "sensational tool" for salespeople on the road, she added.

One Aurum user said WebTrak has advantages that make it well worth its $7,500 to $10,000 price tag.

"The added value of getting [sales leads] from the Web page through a validation process saves us money," said Sateesh Lele, chief information officer at Telogy Systems, Inc., an electronic test and measurement equipment maker in Menlo Park, Calif. Telogy is building a Web page that it hopes will give it an edge over its competitors.

Lele said WebTrak gives his company "a front end where the customer information goes directly from the Internet into our systems."

Aurum's sales force automation software is needed to run WebTrak. But analysts said the product is an early entry in what could become a tidal wave of software designed to help companies generate sales and marketing leads off the Internet.

Sales team

Aurum, already one of the largest sales force automation vendors, recently signed a strategic partnership deal with Cambridge Technology Partners.

Several analysts said Aurum will do well in this market, thanks to its product and its role in high-profile sales force automation projects such as that of MCI Communications Corp. [CW, April 10].

Aurum is "not just responding to customers' needs but giving them a better way of automating the process," said Hugh Bishop, an analyst at Aberdeen Group, Inc. in Boston.



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EMC to open up disk arrays

Symmetrix 5000 will store data from multiple platforms

By Craig Stedman

Continuing its quest to get server buyers to pay higher prices in return for mainframe-quality storage, EMC Corp. last week confirmed its Symmetrix 5000 disk arrays are being opened up to store a mix of data from mainframes, Unix boxes, IBM AS/400s and PC servers.

Data storage

EMC, which is announcing its Symmetrix Enterprise Storage Platform (ESP) today, becomes the first major mainframe disk vendor to embrace non-System/390 data in a mainstream product. IBM's promised Seascape storage devices are supposed to get similar capabilities, but their release was recently delayed from mid-1996 to an unspecified date in 1997 [CW, Oct. 30].

Several EMC customers last week said Symmetrix ESP's ability to centrally store data from different systems should reduce storage management headaches and make it easier to move files from one type of machine to another.

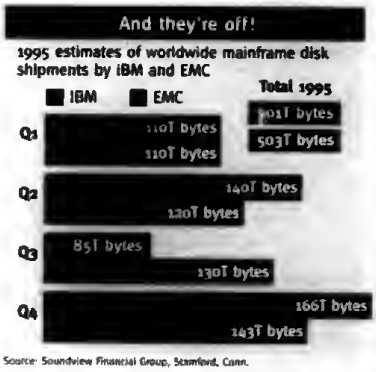
But the multiplatform offering faces a number of hurdles:

- Even if a mix of data is put on a Symmetrix array, EMC will price the array along mainframe disk lines. That typically is two to three times more expensive than stand-alone Unix storage.
- Symmetrix ESP allows users only to divide an array's capacity between mainframes and other systems. The ability to share a common pool of data isn't part of the picture, and EMC officials didn't say when it will be added to the product.

Data sharing "is really where I want to be," said Woody Woodard, director of computer operations and technical services at The Home Depot, Inc., a home improvements retailer based in Atlanta. "This first step is going to help, but the second step will be salvation."

Now, The Home Depot often resorts to "sneakernet," by offloading data to tapes, to move information from its mainframe Symmetrix arrays to Unix servers. Woodard said he doesn't expect EMC to be ready with data-sharing support for at least 18 months. "It's a pretty heavy technical problem," he said.

The promise of multiplatform support was a key factor in the August purchase of a Symmetrix 5230 by the Institute for Scientific Information in Philadelphia. The publisher of scientific databases is starting to move from the mainframe to IBM's RS/6000 Unix systems, and it "didn't want to acquire [disk storage] that we saw being obsoleted in the relatively near term," said Ed Moore, director of information systems and services at the publisher.



Source: Soundview Financial Group, Stamford, Conn.

However, the price gap between Symmetrix ESP and typical Unix storage "was an issue," Moore said. He declined to comment specifically on the difference in cost but said his company hopes to recoup the extra investment through reductions in storage management, power and utility expenses.

Encore Computer Corp. last month introduced a disk array that provides limited data sharing among mainframes and other systems via a software translator, but it has only a minor market presence for now. A year ago, Storage Technology Corp. built multiplatform support into its Nordique array, but that product has sold poorly due to performance limitations.

Novell taps IBM for OpenDoc aid

By Frank Hayes

Frustrated OpenDoc users gave a collective sigh of relief last week as Novell, Inc. announced it will turn over development of the Windows version of OpenDoc to IBM.

"We expected that, and we don't necessarily see it as bad," said Chuck Reeves, a software engineer at DST Technologies, Inc. in Kansas City, Mo. "Novell's commitment, for three or four months back at least, has been a little wishy-washy."

OpenDoc is a system for building applications from software components. When it becomes available next year, OpenDoc will work on a variety of platforms, including Windows, Macintosh and OS/2.

IBM, which is working on OpenDoc support for its OS/2 and AIX operating systems, said it will also take over the OpenDoc development effort for Microsoft Corp.'s Windows 95 and Windows NT. A previously planned version of OpenDoc for Windows 3.1 has been put on hold, and whether IBM delivers it depends on customer interest, said John Slitz, IBM vice president for object technology.

Still, users said they were glad to see an end to repeated delays in Novell's OpenDoc Windows effort. WordPerfect Corp. began the work before it was acquired by Novell in June 1994. But the project's schedule has slipped repeatedly. Windows OpenDoc software development kits were originally scheduled for delivery early in 1995.

IBM has now targeted the third quarter of 1996 to deliver full Windows OpenDoc support.

"There's still a strong interest in the concept," said Bill Monteith, a former chief information officer who serves as executive director of MacIS, a Macintosh user group in Mason, Ohio. "But it's at least a year before it will start moving into corporate hands, and that may be a very optimistic estimate."

Worth the wait

OpenDoc and OLE will support more and more platforms over time

OpenDoc	Available
OS/2	Q1 1996
Macintosh	Mid-1996
AIX	Q3 1996
Windows 95, Windows NT	Q3 1996

OLE	Available
Windows NT	1997
Unix	Mid-1997
IBM mainframes	1998

OpenDoc is being developed by a vendor consortium called Component Integration Laboratories, Inc. in Cupertino, Calif., and is backed by IBM, Apple Computer, Inc., Novell, Adobe Systems, Inc. and the Object Management Group.

Unlike OLE, a similar architecture from Microsoft, OpenDoc was designed to work on multiple platforms and includes a more advanced set of object-oriented capabilities, including operation across a network, users said.

Last month, Microsoft announced that Software AG will port a forthcoming version of OLE, which will work across networks, to Unix and IBM mainframes. But products based on that won't be available until 1997 at the earliest.

IBM and Apple said they will ship OpenDoc software development kits for OS/2 and the Macintosh by the end of this year and will support OpenDoc components in their operating systems beginning next year.

IBM tries to revitalize its application development efforts by boosting VisualAge. See story, page 102.

IBM will link imaging with Notes groupware

By Tim Ouellette

IBM last week sought to address user concerns about the future of its imaging products by outlining plans to integrate the software with Lotus Development Corp.'s Notes groupware.

Imaging systems

IBM and Lotus will develop a gateway between Notes clients and IBM's VisualInfo, an OS/2-based client/server imaging system. The gateway will ship in January, but a real-time connection is expected to ship by next summer. IBM also promised eventual Windows client support and future Notes integration for IBM's ImagePlus AS/400 and MVS/ESA host-based imaging products.

"We see [the Notes integration] as an opportunity to image-enable our desktops and leverage our investment in an industrial-strength imaging system back end [VisualInfo]," said John Kolb, manager of application development at Hewitt Associates, a human resources outsourcer in Lincolnshire, Ill. "We can take documents in a central place and have them accessible to everyone."

About 250 employees use the VisualInfo image system now, but the staff of 5,000 will get Notes by late 1996, Kolb said.

Imaging software converts paper documents into electronic image files that can be viewed, marked up and archived on optical storage.

The Connection gateway could push a loan application file, which is normally part of a structured imaging process, to a Notes user if it requires special approval, for example. Notes users also could query the VisualInfo database and move Notes-based image files into the VisualInfo system.

About time

IBM's promise of Windows client support for ImagePlus customers, despite its lack of a time frame, answered concerns raised by a few users on IBM's CompuServe support forum.

In the past two years, "we have pressed IBM representatives for information on its official view about support for Windows. We get absolutely nowhere," wrote one CompuServe user from the UK before IBM's announcement last week.

"We are doing remarkably well without a Windows client," said Bob Schwartz, program manager for ImagePlus at IBM. "But we will have a more generic Windows capability for all platforms in the future."

The state of Kansas uses imaging to improve service and save money. See story, page 59.

RAM Mobile Data extends its boundaries

By Mindy Blodgett

As the vaunted wireless revolution slowly takes shape far behind schedule, RAM Mobile Data USA L.P. in Woodbridge, N.J., last week announced a program to attract users to the untethered world.

RAM Mobile Data's Strategic Network promises access to its Mobitex network and other wireless technologies, such as circuit-switched cellular, paging, satellite and dial-up technologies.

The program will be available commercially early in the second quarter of next year.

Mobitex will remain RAM Mobile Data's primary service. But company officials said the Strategic Network will be offered to users outside of RAM Mobile Data's coverage area or to those, with needs better served by the other technologies.



"Most of our customers want a seamless solution," said William Lenahan, president and chief executive officer of RAM Mobile Data. "They don't want to have to make multiple connections. This will give them full connections without worrying about which technology they are using."

Industry observers said initiatives such as RAM Mobile Data's could jumpstart the wireless industry.

"Now, RAM will be more of a communications network rather than just one wireless technology," said Andrew Seybold, editor of "Outlook on Communications and Computing," a newsletter in Boulder Creek, Calif. "I'm very happy to see RAM doing this because this is the kind of access customers need to seriously consider wireless."

Jeff Frick, manager of consumer service information management at GE Appliances in Louisville, Ky., is testing the new program. He said 80% of the company's 2,000 field service technicians are on the RAM Mobitex network.

GE plans to put the remaining 20% on the network, because they work in remote areas without RAM coverage.

"The name of the game is customer satisfaction," Frick said. "Being able to walk into a customer's house and wirelessly connect back to the office gives us a very professional image and eliminates costly and inefficient paperwork," he said.

One wireless technology conspicuously left off RAM Mobile Data's list is cellular digital packet data (CDPD). The protocol is championed by carriers such as the AT&T Wireless Division in Kirkland, Wash.

Mobile links are in

More network providers need to link their technologies to attract mobile customers, said Andrew Seybold, editor of "Outlook on Communications and Computing." ARDIS Co. already offers satellite and cellular access as part of its gateway service.

And Ameritech Cellular Services, a CDPD carrier, stunned the wireless world when it revealed it is hammering out resale agreements with ARDIS and RAM Mobile Data [CW, Oct. 9]. The companies have competing protocols.

Along with RAM Mobile Data's announcement, Novalink Technologies, Inc. in Fremont, Calif., announced the first multimode wireless radio modem supporting RAM Mobile Data, a cellular and satellite link on one $500 Type II PC card. The GoAnywhere modem is scheduled to ship next spring.

— Mindy Blodgett

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HP beefs up its old minicomputer line

Price cuts on tap for entry-level HP 3000s

By Michael Goldberg

Hewlett-Packard Co. today will unveil a slate of HP 3000 servers as the latest editions in its 23-year-old proprietary computer line.

The rollout will include high-end models with new processors and midrange versions with increased data storage.

HP also will announce 40% price cuts on its entry-level HP 3000 departmental servers, the 9x8 series. The new systems will ship within 12 weeks of ordering, company officials said.

HP 3000 users applauded the company's dedication to the systems, which run the MPE/IX operating system. As of the end of last year, there were approximately 35,400 HP 3000 servers installed and in use, according to International Data Corp. in Framingham, Mass. HP officials claim that number is closer to 65,000.

Server rollout

"It's always positive to see they're still continuing to support the 3000 side of the house," said Michael Kapsack, systems manager at the Aircraft Integrated Systems division of B. F. Goodrich Co. in Vergennes, Vt.

Keeping an eye out

Kapsack said longtime users warily watch HP for signs that the vendor's interest in the HP 3000 is waning. His company has two midrange HP 3000 models that support 130 users, and HP's planned announcement should help it stick with the computer line for the next three years, he said.

At the enterprise level, HP has promised a 15% performance boost from the new processors. The HP 3000 Model 996 uses the company's PA-RISC 7150 microprocessor and scales from one to eight processors in a symmetrical multiprocessing platform. It costs the same as current 995 models.

In the midrange, HP 3000 Model 969KS includes a PA-RISC 7200 chip that clocks in at 120 MHz. The server is faster than the midrange versions with 100- and 80-MHz chips that were unveiled in March. These computers scale from one to four processors.

Better offerings

David Snow, a product manager at HP, said the servers will come with greater disk capacity and CD-ROM drives for software installation and document distribution. And a new user licensing system lowers fees for firms with fewer than 64 users.

Observers said Palo Alto, Calif.-based HP is doing a good job of caring for its established installed base. Like a parent that seeks to treat two children fairly, HP generally has kept price and performance parity between the HP 3000 and its Unix-based counterpart, the HP 9000 line, which run on the same hardware components.

"HP has a nice strategy of keeping the street even between the two," said Bill Moran, an analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y.

Moran said other vendors have had problems navigating the road between proprietary and open systems. Data General Corp. recently lost customers who used its proprietary platform after it introduced a Unix server line.

Ron Seybold, editor of "The HP 3000 NewsWire" in Austin, Texas, said the announcement should assure customers that the HP 3000 has a secure future. But it lacks commitment by HP to install the latest PA-RISC microprocessors in the servers when they become available next year, he noted.

New HP 3000 servers

996	One 7150	64	$285,531
996	Eight 7150	100	$765,531
969KS	One 7200	8	$93,200
969KS	Four 7200	20	$148,100

All prices are for standard equipment, including MPE/IX operating system and Image/SQL database.

Trio of tools to manage NT debut

By Patrick Dryden

As Microsoft Corp.'s Windows NT spreads throughout client/server networks, more management tools are on the way to help systems administrators remotely care for those desktops and application servers.

Intel Corp. will expand its LANDesk line this week with an entry-level suite of tools for NT workgroups, virus protection for NT servers and a monitoring system for NT and Novell, Inc. NetWare servers.

Tivoli Systems, Inc. sought to dispel its Unix-centric image last week by adding broader PC/LAN support and an NT server option for the Tivoli Management Environment (TME).

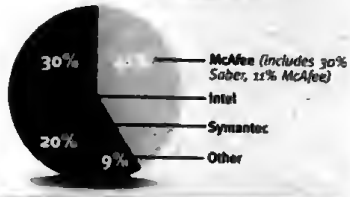
McAfee Associates, Inc. released a LAN management suite last week that combines tools gained in the August acquisition of Saber Software Corp., setting the stage for full NT support in February.

This is good news for users such as Florida Power Corp., a St. Petersburg-based utility with nearly 1,500 NT stations at 100 sites. Each runs a multitasking customer service application that has exceeded the capability of Windows 3.1, said Mitch Hull, manager of information systems at the utility.

"Finding help with software management out to the desktop has been very difficult," Hull said. He tested Tivoli's new NT tools for inventory and software distribution.

The appearance of these tools from the three vendors reflects "the awareness among users that they now have another operating system to manage in their environment," said Rick Villars, an analyst at International Data Corp. in Framingham, Mass.

Integrated PC network management suites market



Source: International Data Corp., Framingham, Mass.

Microsoft's Systems Management Server, the NT-based tool set for BackOffice users, provides only a small portion of the tools users need, Villars said. So established systems management vendors are trying to fill in the holes.

Intel's LANDesk Workgroup Manager, available now and starting at $999 for 25 nodes, handles routine tasks for small LANs of NT and NetWare systems.

The LANDesk Management Suite will gain this mixed support for larger networks when Version 2.5 ships in January, a company official said.

In two weeks, Intel will ship LANDesk Server Manager Pro, a battery-backed monitoring adapter with a modem and an NT console program. This combination, priced at $1,499, lets managers remotely check, control and reboot NetWare and NT servers networkwide or via modem.

For its tool set, Tivoli blended management parts from Intel and Microsoft in TME for Windows NT, a version of its enterprise-scale client/server offering. It ships next month, starting at $500 per server and $225 per client.

McAfee in Santa Clara, Calif., launched Saber LAN Workstation 5.5, the first suite combining its tools with systems management tools from Saber. Functions include server backup and desktop and LAN asset management. The price is $65 per node for 100 users.

Intel NT apps to run on Alpha

By Michael Goldberg

Digital Equipment Corp. next year plans to offer translation software that allows 32-bit Windows NT applications written for Intel Corp. machines to run on Digital's Alpha platform.

Digital officials plan to demonstrate the software, called FX!32, at the Comdex/Fall '95 trade show in Las Vegas next week. They said they are preparing to field-test the technology at several beta sites before making it available in mid-1996.

More appeal

If Digital can deliver on its promise, it will create new potential for the Alpha family and make it more attractive to prospective customers, users and analysts agreed. There are approximately 2,000 Windows applications developed for Alpha systems, barely a puddle compared with the Intel-based ocean, observers said.

Digital initially will distribute FX!32 as freeware via its World Wide Web site. It will later make it part of the next release of Microsoft Corp.'s Windows NT, said Aaron Bauch, strategic marketing manager at Digital's semiconductor business in Hudson, Mass.

In the past, Digital and Microsoft have worked with Insignia Solutions, Inc. in Mountain View, Calif., on emulation software to make 16-bit Windows applications for Intel's x86 platform run on Digital Alpha workstations and servers. This emulation process generally produces subpar performance on the Alpha systems, Digital officials said.

FX!32 software was designed to bring Intel-based applications developed for the Win32 application programming interface set much closer to the "native" Alpha environment. That means applications for the Alpha platform will run at comparable or better performance levels than the same applications on the Intel platform, Digital officials said.

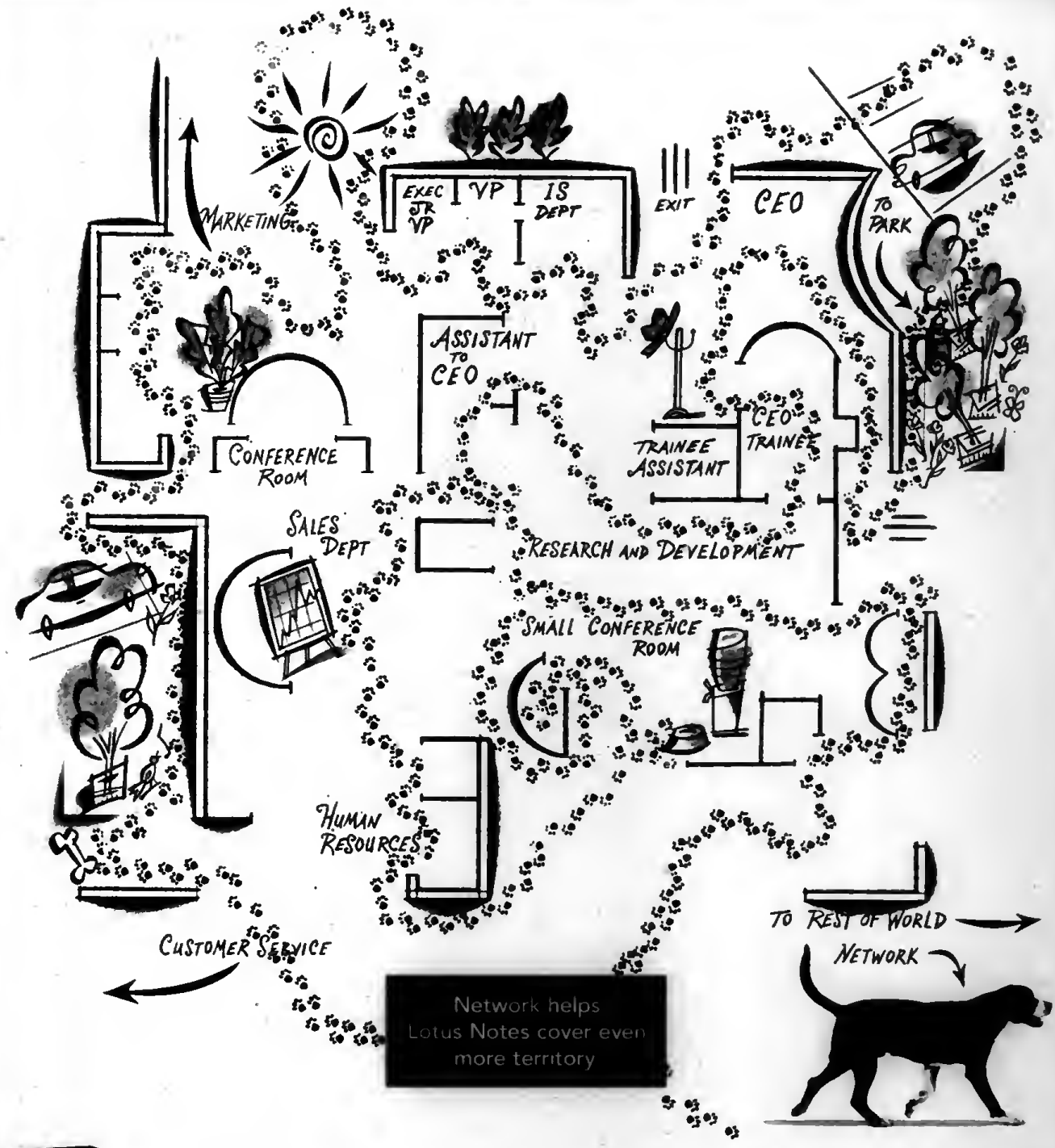
Helping hand

The FX!32 technology "has the very strong potential to help Digital Alpha in the marketplace," said George Weiss, an analyst at Gartner Group, Inc. in Stamford, Conn.

The prospect of opening Alpha's door to the wide world of Intel-based applications made some users positively giddy.

"That's really incredible," said Gregory Wells, a systems consultant at Commonwealth Edison Co., a power utility in Chicago.

"If they are able to do this [application translation] and stay ahead in performance of the leading processor vendor, that's something," he said.

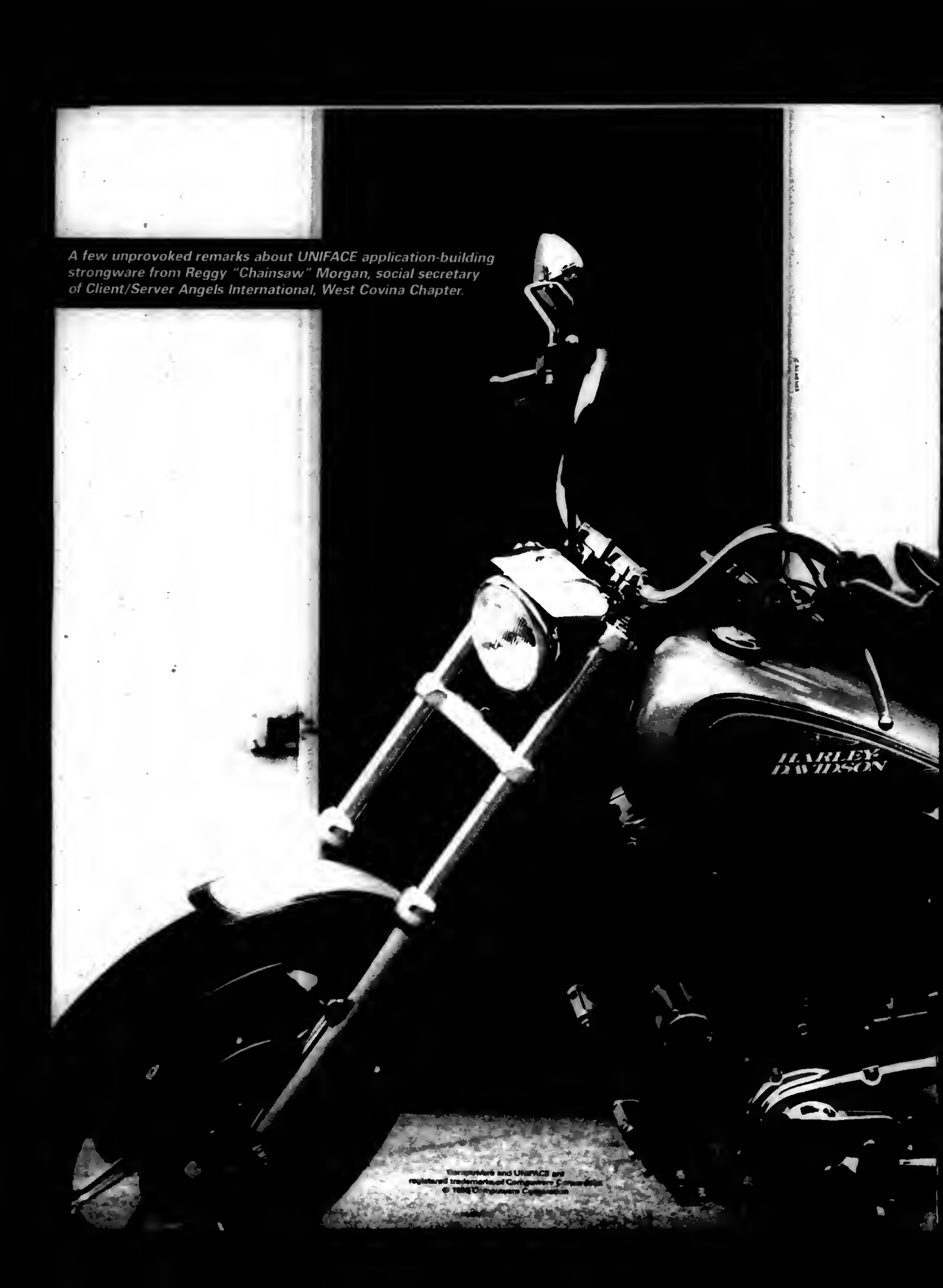




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A few unprovoked remarks about UNIFACE application-building strongware from Reggy "Chainsaw" Morgan, social secretary of Client/Server Angels International, West Covina Chapter.
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UNIFACE APPLICATION DEVELOPMENT STRONGWARE

Security plans lag computer crime rate

By Gary H Anthes

Nearly every major corporation in the U.S has been victimized by computer crime in the past five years — many of them repeatedly and primarily by employees, suggests a study recently published by Michigan State University

Yet despite such alarming statistics, 40% of the corporations in another recent survey — this one by Datapro Information Services Group — said they had no corporate security policy

Of the 150 companies that responded to the Michigan State survey of 600 large companies, 148 said they had suffered from crimes that included the theft of credit-card numbers, trade secrets and software and snooping by employees into confidential computer files.

More than 43% said they had been victimized 25 times or more, according to the survey, which was conducted by the university's School of Criminal Justice in East Lansing Respondents also reported substantial increases in the number of attacks by computer viruses and harassment of employees via networks.

"I was most surprised by the amount that they admitted," said criminal justice professor David Carter, co-author of the survey report. "Previously, corporate security directors would not admit any of this stuff." However, the survey allowed annnymous responses.



Source: Michigan State University School of Criminal Justice, East Lansing, Mich

Most of the crimes were committed by employees, and most involved the theft of intellectual property such as copyrighted software, Carter said. He called that significant in light of the fact that managers tend to worry more about external hackers.

Carter said the survey results suggest companies should pay more attention to hiring, training and management practices rather than focusing so much on technological safeguards such as network firewalls and encryption. "I think there is a tendency to look at hardware and software solutions without looking at policies," he said. "And if your biggest losses are coming from inside the wall, you don't need to build a bigger wall."

William Malik, a research director at Gartner Group, Inc. in Stamford, Conn., said his experience with clients bears out the survey findings. "Ninety percent of computer security problems are caused by insiders," he said.

Malik agreed that technology is no panacea. "No technology, no matter how advanced, can address a management lapse," he said. "But good management practices can always deal with a technology void."

Respondents to the survey said the type of crime that increased most over the five-year period was theft or attempted theft of customer information, with 81% reporting an increase in that area.

Carter cited other recent research by a private investigative firm that showed that the average loss from all types of business fraud is $23,000, while loss from computer-based fraud is $500,000, or 22 times the average loss from all fraud.





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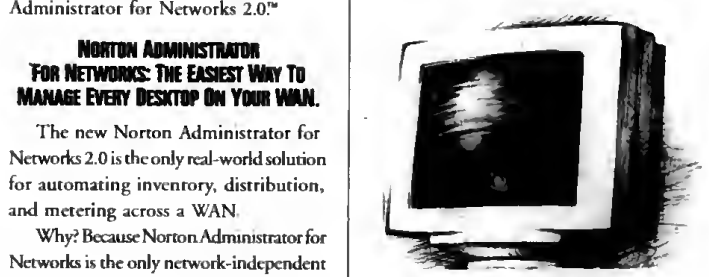
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Chemical to call most IS shots in merger with Chase

Bank executives face many challenges when phasing out a new partner's information systems

By Thomas Hoffman and Julia King

When Chemical Banking Corp. and The Chase Manhattan Bank NA joined forces recently, executives at the New York-based banks called it a merger of equals.

But in reality, Chemical will be calling most of the shots at the new Chase Manhattan Corp., particularly when it comes to technology choices.

That is a cross that other banks must bear as they get caught up in this industry's recent merger craze. They, too, are weeding through the critical systems selection and consolidation process.

During this phase, bank executives must tread carefully while explaining to information systems staffers why their systems were passed over for the merger partner's gear. That is especially important because those same disappointed IS staffers will be needed to help smooth systems consolidation, industry experts said.

Chase and Chemical will almost certainly face those challenges. The banks recently disclosed that eight of the many informatioo systems to be used at the combined entity will be Chemical systems.



Chase's Michael Levine *says Chemical's systems are more in line with the merged banks' transaction volumes*

Among these is Chemical's demand-deposit system from Systematics Information Services, Inc. Chemical's MVS-based deposit system was designed to handle a range of integrated monetary processing such as overdrafts, lines of credit and savings.

Because many of its systems are newer and more flexible than most of Chase's 20-year-old-plus legacy applications, Chemical's systems are "more adaptable to the combined [transaction] volumes" of Chase and Chemical, said Michael Levine, a division executive for regional banking at Chase in New Hyde Park, N.Y. Levine declined to disclose those volumes, however.

Yet choosing the Chemical systems doesn't automatically mean Chemical's IS staff will be picked to support them, Levine said. Still, bank executives will be hard-pressed to convince Chase IS employees of that, which could lead to a shaky transition.

Moving quickly

One way to avoid such potholes during the systems selection process is to move swiftly, which Chemical/Chase has done well, said Dick Griffith, a former executive vice president at Bank of America who helped orchestrate that bank's 1990 merger with Security Pacific Corp.

The Chemical/Chase team selected its first systems in six weeks. During the 1991 Chemical/Manufacturers Hanover Trust Co. merger, the process took six months.

Another useful tactic during the integration phase is brutal honesty with staffers about their employment prospects, said Kevin Roden, director of deposit and consumer banking systems at Bank of Boston Corp.

Last year, Bank of Boston consolidated six banks, executing four systems conversions in the process. Last month, the bank announced it also would acquire South Boston Savings Bank, which has about $2 billion in assets.

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Computer Industry

Autodesk heads for multimedia clash

CAD competition drives company into tougher markets

By Jean S. Bozman
SAN FRANCISCO

Autodesk, Inc., a $455 million computer-aided design (CAD) company, last week outlined an ambitious growth plan designed to "expand its franchise" into the multimedia and digital publishing markets. But industry analysts already are warning that the plan could cause Autodesk to compete head-to-head with Microsoft Corp. and Silicon Graphics, Inc. (SGI).

The San Rafael, Calif.-based firm built its business on AutoCAD, a PC-based drafting and design package that runs on DOS and Windows. Autodesk claims it is the fourth-ranked PC software vendor worldwide, after Microsoft, Novell, Inc. and Adobe Systems, Inc., based on revenue.

Its design software, which runs on Microsoft's Windows NT and Intel Corp. Pentium chips, already is invading the mid-range CAD market dominated by three-dimensional design applications for more expensive Unix workstations, analysts said.

But there is now increased competition in Autodesk's traditional CAD market from Bentley Systems, Inc. in Exton, Pa., and Intergraph Corp. in Huntsville, Ala., both of which offer CAD products for NT systems, analysts said. And many developers are busy porting Unix design applications to NT.

On the right track

The competition has prompted Autodesk's desire to hedge its bets, and the company is moving quickly into new product areas. It has boosted non-AutoCAD sales from 5% to 25% of total sales since 1993, analysts said.

At a user group meeting last week, Autodesk unwrapped products that target new markets such as multimedia, geographic information systems and data management.

Following a January company reorganization into five product-focused business units, Autodesk executives said they are on the right track.

"We're almost half a billion dollars in revenues," said Carol Bartz, Autodesk's chief executive officer, "and we haven't hit Microsoft head-on." She said she isn't worried about Microsoft. The two companies could run into each other after Microsoft's SoftImage computer-animation software is delivered on NT next year, and SoftImage competes with Autodesk's 3-D Studio Max on NT, she said.

Analysts also cautioned that Autodesk could bump into SGI's Alias/Wavefront animation and design software.

Even so, "Autodesk is of a size to throw significant resources into something and to make itself heard, even if the other party is Microsoft," said Bruce Jenkins, a vice president at Daratech, Inc. in Cambridge, Mass. In the end, Autodesk must maintain its focus on its target markets and mainstream CAD customers, said Gisela Wilson, an analyst at International Data Corp. in Framingham, Mass. But so far, "they know exactly where their bread and butter is coming from," Wilson said.



Eyewitness Animations *in Pompano Beach, Fla., used Autodesk's 3-D Studio package to create this image of a reconstructed accident scene*

Briefs

SPSS profits up

SPSS, Inc. reported record revenue and profit for its quarter ended Sept. 30. Revenue for the Chicago-based statistical software developer jumped 20% to $15.6 million, compared with $13 million reported for the same quarter last year. Profits rose to $1.5 million from $1 million in the same period last year.

Cheyenne buys Blitz

Cheyenne Software, Inc. in Roslyn, N.Y., bought the assets of Media Blitz, Inc., a Palo Alto, Calif., maker of optical and tape jukebox and CD-ROM management software for use in Microsoft Corp. Windows NT networks. Media Blitz uses advanced file system technology, which lets users attach optical devices to NT machines, while providing transparent and shared access to all users on the network. Terms of the agreement weren't disclosed.

QMS will refinance

QMS, Inc. plans to refinance all its debts and post fourth-quarter results. The results will include restructuring and other expenses from the Mobile, Ala., printer maker's recent workforce reduction and sale of its European operations.

SHORT TAKES The board of directors of San José, Calif.-based hard disk drive manufacturer Maxtor Corp. has approved an acquisition proposal by Hyundai Electronics America on behalf of Hyundai Electronics Industries Co. (HEI) to acquire all outstanding shares of Maxtor not already owned by HEI or its affiliates. . . . Larry Sanders, former vice president of international sales at Conner Peripherals, Inc., was named president and chief executive officer of Fujitsu Computer Products of America. . . . Casere Corp. invested $2.4 million in ZyLab Corp. for a 20% ownership stake in the Gaithersburg, Md., firm. . . . AirTouch Communications last week increased its ownership of Cellular Communications, Inc. by about 20%, giving it an almost 32% stake.

Netwise abets Microsoft in enterprise DBMS bid

By Dan Richman

Microsoft Corp.'s recent purchase of middleware vendor Netwise, Inc. is part of a bid to become a more serious contender for enterprisewide database installations and enhance the capabilities of its SQL Server product at current sites.

"Microsoft [wants] to be taken seriously as an RDBMS provider capable of supporting an entire company, not just departments within a company," said Bobby Cameron, an analyst at Forrester Research, Inc. in Cambridge, Mass.

For SQL Server user Chuck Taylor, manager of client/server integration at Resolution Trust Corp. in Rosslyn, Va., a beefed-up product would be welcome.

"Right now, we would have to use products from four different vendors to participate in distributed transactions," Taylor said. "Something to simplify that and provide additional robustness and control would be of obvious interest, though whether we'd buy into it would depend on pricing and packaging."

Until now, Microsoft has had to depend on third parties such as Information Builders, Inc. in New York and rival Sybase, Inc. in Emeryville, Calif., to provide mainframe connectivity.

The Netwise purchase is supposed to change this. The privately held company in Boulder, Colo., was founded in 1986 and employs 49 people. Microsoft will hire about 25 employees, including the entire engineering and development team and key marketing, sales and support staff, said Gary Voth, Microsoft's group product manager for databases and development tools.

The former Netwise employees will form a product unit at Microsoft headed by Don Thompson, Netwise's vice president of engineering. Netwise will cease doing business as an independent company, and roughly half its staff will be laid off.

The value of the purchase hasn't been disclosed. John Mann, a senior analyst at The Yankee Group in Boston, said he didn't know Netwise's net worth but estimated its annual revenue at between $8 million and $9 million. "Microsoft isn't spending a lot of money here. This is a small strategic move to gain the product's functionality," he said.

Netwise manufactures TransAccess, a family of middleware products that let mainframes cooperate with client/server relational database management systems such as Microsoft's SQL Server.

As modified by Microsoft, TransAccess will turn mainframes that run IMS and CICS transaction managers into peers in a distributed processing environment for on-line transaction processing, Voth said. SQL Server and the mainframes can serve as a client or server in a transaction. TransAccess also works with Microsoft's BackOffice suite and Visual Tools.

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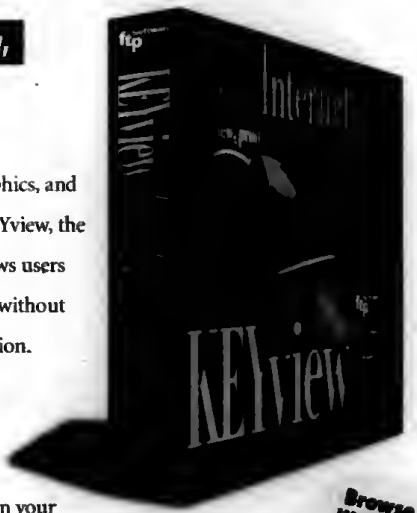
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E-MAIL OVERLOAD

Taming the E-mail shrew

CONTINUED FROM PAGE 1

Fortunately, most information systems professionals don't have such crowded in-boxes. A *Computerworld* survey of 100 IS professionals found that 95% report getting fewer than 50 messages a day and that 82% say E-mail has made them more productive. But 15% of the respondents admitted they have a backlog of unread messages — a warning sign of overload.

According to E-mail experts, unless message-swamped workers learn to manage their E-mail with daily discipline and filtering technologies, they will suffer lower productivity and higher stress.

Although the phenomenon has existed for a few years, users and analysts said E-mail overload in general is getting worse and affecting more people as they connect to the Internet to join electronic discussion groups.

For example, as soon as Honeywell, Inc. improved Internet access for its worldwide users, corporate E-mail traffic jumped from about 30,000 messages per month to about 500,000 messages per month, said Tom Doyle, project leader for E-mail integration at the Minneapolis company.

Just one high-volume Internet mailing list, called a listserv, may disgorge 30 or more messages a day to thousands of subscribers. Often, Internet "newbies" sign up for four or five listservs, get an unexpected flood of messages and learn to "unsubscribe" to all but the best.

"I am going to guess that when people get mailbox saturation, 80% of the time it is caused by automated mailers," said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston.

Thomas Bridges, network administrator at the Internal Revenue Service in Austin, Texas, said listservs provide fast and valuable assistance for technical research. But he acknowledged that technical workers are often the victims of E-mail overload because they haven't learned to filter and sort their messages.

But even employees who aren't Internet-connected or research junkies can get overloaded unless they are trained in good mail management techniques, said Ira Chaleff, president of the Institute for Business Technology, Inc., a consultancy in Washington.

Chaleff's clients have included sales managers swamped by E-mail reports from the field and midlevel managers with dozens of Notes databases to monitor. The biggest problem, Chaleff said, is that people with 250 messages in their in-box can't find the handful of messages that really need action.

Experts recommend that E-mail users scan the subject lines or use software filters to identify the urgent action items. The rest can be deleted or stored in topical folders for easy retrieval later.

"You shouldn't just *read* your mail, you've got to *process* your mail," Chaleff said. "Answer, delete or categorize the messages in your in-box, but don't just surf through them — that's what's deadly."

Reducing overload

Senders can help with this "E-mail triage" process by writing informative subject lines, several high-volume E-mail recipients said. "Judicious use of 'forwarding' features in mail systems would do wonders to reduce E-mail overload," added Edward A. Mabry, associate professor of communications at the University of Wisconsin at Milwaukee.

Several E-mail packages have rules-based filters that can automatically place incoming messages into certain folders, depending on the sender or key words in the subject line. For example, the user can create a rule that if the message is from the boss or about Project Sapphire, it goes in the "urgent" folder.

But users said filters are only a partial solution because they, too, have shortcomings.

"I've used software filters and automatic paging notification for 'urgent' E-mail messages, but I gave it up," said Robert W. Lucky, corporate vice president for ap-

E-mail tips for senders

1. Cover just one topic per message to make it easy for recipients to file, forward, delete, store or answer.
2. Use clear subject lines so recipients can gauge quickly the message's importance and topic.
3. Keep distribution lists small and focused. Use restraint in forwarding information.
4. Keep messages brief; one-screen messages are best.
5. Post general-interest announcements on a central electronic bulletin board.



Junk mail extends its reach

By Tim Ouellette and Mitch Betts

Chain letters. Product-hawking brochures. Pleas for donations in somewhat shady causes. All are coming to your E-mail box soon — if they aren't there already.

The culprits are new software agents that allow list-builders to "crawl" the Internet and scoop up E-mail addresses from Usenet newsgroup postings and the like. You can look for the direct-marketing industry to start exploiting those lists by "spamming," which is Internet slang for unsolicited mass messaging, said Nelson Thall, research director at the Marshall McLuhan Center for Media Sciences in Toronto.

But plans for a counterattack already are in the works. "That is something we're going to try to stop. The last thing the Internet needs now is junk E-mail," said Marc Rotenberg, director of the Electronic Privacy Information Center in Washington.

> "The problem with the Internet is that some people look at the growing numbers of users and say, 'That's a great way to send an E-mail letter to everyone and sell them something and make money.'"
>
> — Patrick Crispen, service consultant, University of Alabama

But tackling this task is too big a job for one person or organization. The Internet is largely self-policed, irate users who receive junk E-mail often turn to "flaming," or overloading the sender's address with thousands of threatening or disdainful reply messages.

The Marketry, Inc. in Bellevue, Wash., just last month offered 250,000 Internet addresses for rent at $50 per 1,000 names. The list had been broken down into categories such as adult, computer, sports, investor, games, religion and pets. But Rotenberg and other electronic privacy advocates raised an alarm and encouraged Internet users to send a flood of protest E-mail to the broker. The Marketry responded by withdrawing its offer (CW, Oct. 30).

Managers of list servers, which are computers that receive and forward topic-related messages to subscribers, try to limit access to these servers to members only, thereby keeping unwanted junk mailings out, said Patrick Crispen. He is a user service consultant at the University of Alabama in Tuscaloosa and owns several mailing lists.

"The problem with the Internet is that some people look at the growing numbers of users and say, 'That's a great way to send an E-mail letter to everyone and sell them something and make money,'" Crispen said.

A big part of the lure for marketers is that "the cost of direct mail over the 'net may be as low as 1/100th the cost of ink and paper," Thall said. While the Electronic Messaging Association in Arlington, Va., valued E-mail at $12.7 billion last year, firms won't want to spend a large portion of the cost of building and maintaining their E-mail systems to process junk mail.

So many mailboxes, so little time...

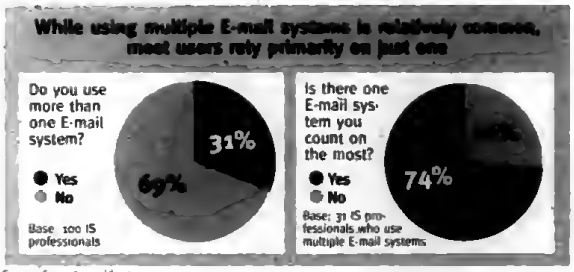
By Tim Ouellette

Just as too many cooks may spoil the broth, many companies may be stirring together too many different E-mail systems.

In some cases, users within the same company can't contact co-workers who use a different E-mail system. In other cases, users with several E-mail applications on their desktop find they have to open and close each one to get all their mail.

The city of San Jose, Calif., for example, used three E-mail packages among its municipal departments. Since each department wanted to keep its own system, E-mail administrator Gary Zouzoulas turned to software from Alisa Systems, Inc. in Pasadena, Calif., to make the packages work together seamlessly.

"E-mail has become mission-critical to city workers" since the systems were integrated, Zouzoulas said.



Source: Computerworld survey

The software can take a message from one system, convert it to a special format, then convert it again to the receiver's format if needed. The city has also standardized on two similar word-processing platforms, Microsoft Corp.'s Word and Novell, Inc.'s WordPerfect, to limit errors with file attachment conversions.

It is important to keep users informed when linking E-mail systems, said Tom Doyle, project leader for E-mail integration at Honeywell, Inc. in Minneapolis. Doyle uses integration software from Control Data Systems, Inc. to link five E-mail systems.

"We didn't really do a good job of telling our users what we were doing," he said. "They were screaming and hollering" because the integration software wasn't completely transparent, he said.

Companies should avoid spending a lot of money on integration and standardize on one or two E-mail systems, but no more than that, said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston.

From the user point of view, those with several E-mail packages have to check those mailboxes one by one. That process drags down productivity and can result in the loss of urgent messages, noted Ron Rassner, vice president at Creative Networks, Inc., a market research and consulting firm in Palo Alto, Calif.

To provide one interface for several E-mail systems, universal in-box software is available from vendors such as ConnectSoft, Inc. in Bellevue, Wash. Lotus Development Corp., Novell and Microsoft all have said they plan to support a form of universal in-box in their groupware products.

plied research at Bellcore in Morristown, N.J. The program paged him with any E-mail containing the word urgent, he said, but "word got out that I was using such a program, and everyone was careful not ever to use that word."

Lucky said the filters were "modestly effective" but often failed to flag items from "unknown external people who were very important, but the filter didn't know it."

Integrate it

To make matters worse, today's white-collar worker may have to keep track of several different E-mail systems. For example, there may be mailboxes for two internal E-mail networks, plus the Internet, CompuServe and an on-line news service. Hence the trend toward integration and consolidation of those multiple E-mail systems into a single stream that allows the user to see and prioritize messages in one place (see stories this page).

But, ironically, some people *like* to have multiple E-mail accounts so they can use different accounts for different purposes.

Some users have a "public" E-mail address for the bulk of their message traffic, such as Internet mailing lists, and a more "private" address for close associates, said David Shenk, a New York-based researcher who is writing a book on the "information glut."

New obstacles

Putting up new barriers — such as filtering E-mail and restricting access — is a classic human response to information overload, Shenk said.

"But I don't know which is scarier: information overload or having information screened out by a soulless machine," he said.

Of course, people bring the information glut on themselves, and some even become addicted to massive amounts of message traffic, Shenk said. "On vacation, they miss that titillating quality of fast communications," he said.

But even overloaded users said they would refuse if asked to give up their E-mail because E-mail is more efficient than telephone tag, boring meetings or even voice mail.

Suess, the E-mail overload victim in Baltimore, said he has "given up on voice mail. I just find it too inefficient time-wise. I tell people who really want to reach me to call the secretary and she will take the message and E-mail me."

tips for recipients

1. Don't clog your in-box with messages you have read. Keep fewer than a dozen important messages in the in-box or an "urgent" folder.
2. Create topical folders for easy retrieval. If you get more than 30 messages per day, use rules-based filtering software.
3. Shut off the "beep" notification feature. Check your in-box a few times a day, but don't let the alarm interrupt you.
4. Consider having a "public" and a "private" E-mail address.

Source: Institute for Business Technology, Inc., Washington; Susan Silver, author of *Organized to be the Best!* (Adams-Hall), Los Angeles

Filtering technology: E-mail's Holy Grail

By Mitch Betts

Several on-line services and E-mail packages have rules-based filtering technologies that automatically put certain types of messages into user-defined folders.

But those tools are "pretty primitive" because they don't do enough to help users figure out which messages are important, said Paul Saffo, a director at the institute for the Future in Menlo Park, Calif.

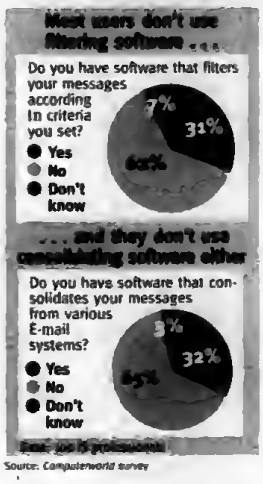
What information-swamped users really need, he added, is context-sensitive filtering, where a program scans long E-mail messages and highlights the most important part of the message.

That day may come sooner than expected. Intell.X in Arlington, Va., last week announced it has developed a prototype of "summarizer" technology that automatically summarizes the key points in electronic news articles and E-mail.

The summarizer will be embedded in an on-line information service later this year. It will be available as a stand-alone product next year, a spokeswoman said.

The concept, which was adapted from systems used by the U.S. intelligence community, uses natural language processing and relevance ranking to extract the most important noun phrases. The result could be a headline and several bullet points, or the user could get an "enriched summary" of 20 to 30 words describing key themes.

Meanwhile, researchers at MIT are working on the next-generation filtering technologies and software agents, which are semi-intelligent programs that handle routine tasks for the user.

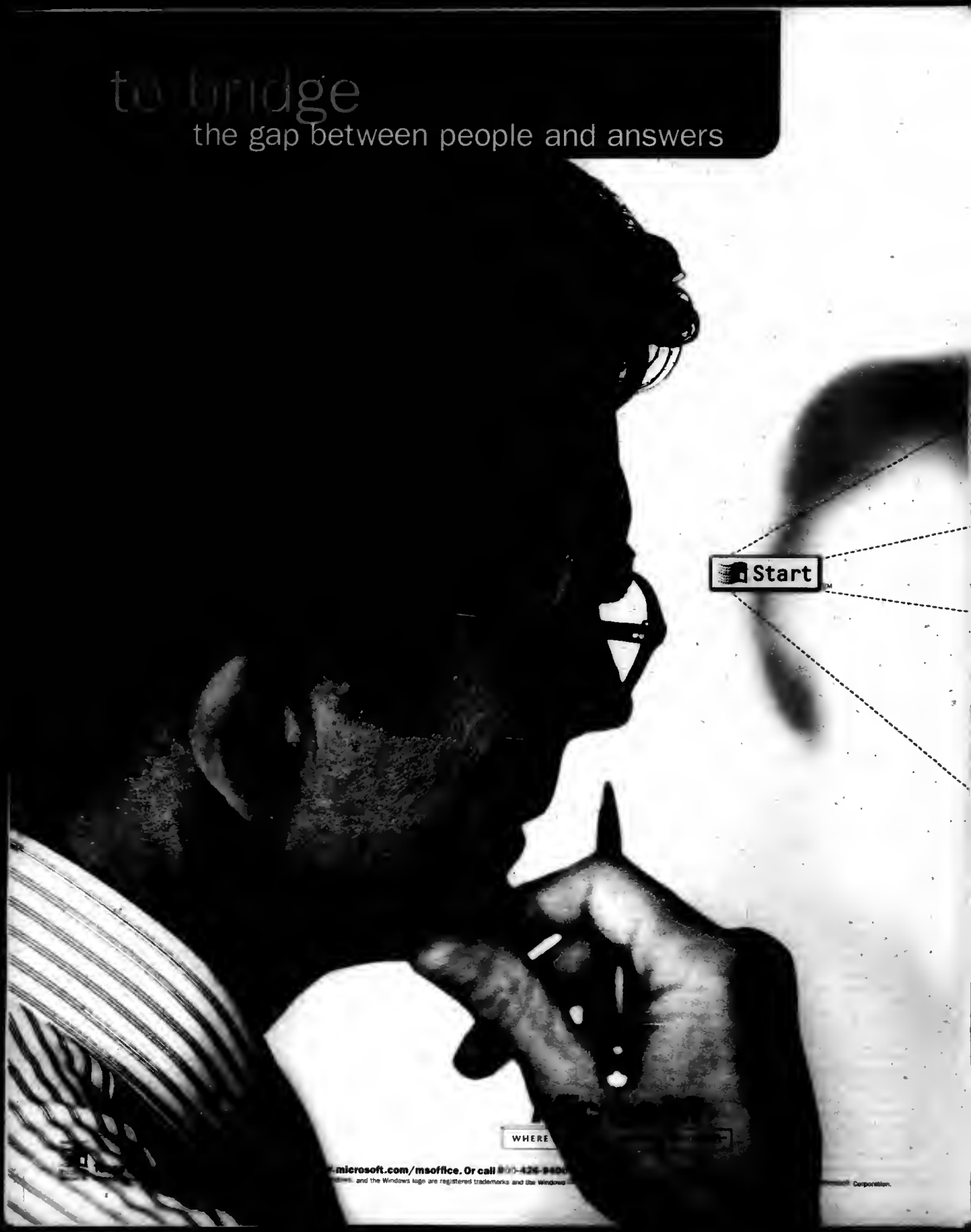


Source: Computerworld survey

Pattie Maes, an associate professor at MIT's Media Lab, is developing futuristic software agents to help people cope with all kinds of information overload, including E-mail, classified advertisements and World Wide Web documents.

One type of software agent would learn by watching the user's information-processing habits and then mimic that behavior. Another type would suggest which articles to read based on recommendations from other users.

Thomas W. Malone, the Patrick J. McGovern professor of information systems at MIT, said the most promising approach may be to combine all types of filters and allow the user to see, change and override the filtering rules.


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Out of Office

When Novell last week announced its plans to sell WordPerfect Office and Quattro Pro, one newspaper quoted a former WordPerfect executive as conceding, "Microsoft has won it all." I hope whoever takes WordPerfect Office off Novell's hands doesn't agree.

Novell's asset sale comes on the heels of persistent rumors throughout the summer that IBM would dump the SmartSuite package it picked up with the acquisition of Lotus. To IBM's credit, the company has pretty well scotched those reports, but buyers are still leery about committing to anything but the Microsoft standard. The result: Microsoft claimed an overwhelming 90% of the overall suite market in the most recent quarter and 100% of the Windows 95 suite business, in which it is the only player. The market is mature, and the argument is that anyone who can't win shouldn't play.



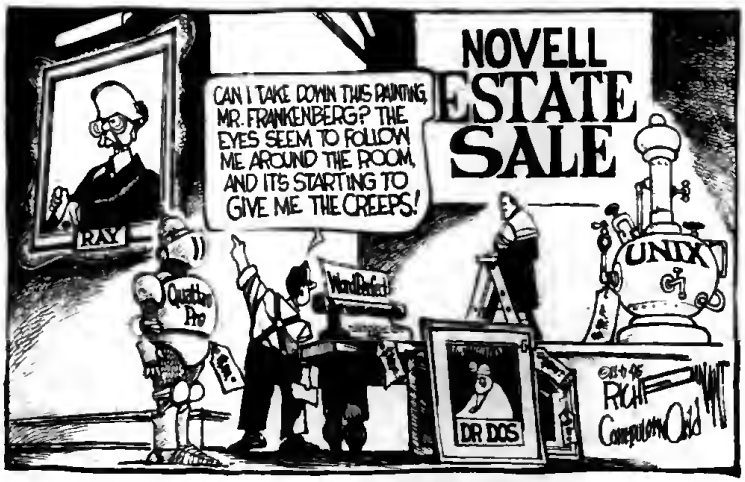
If that were true, then we wouldn't have political third parties, microbreweries or Ben & Jerry's. Any market benefits from vigorous competition, and this is no exception. What's more, it is possible that a buyer who integrates WordPerfect Office really well with something else, such as a database or the Internet, could crawl back into this thing.

Software companies long ago ran out of innovative ideas for suites. Over the past three or four years, they've concentrated on jamming as many features as possible into the box, creating 110-Mbyte monsters such as WordPerfect Office. Users don't need most of this stuff. They want software they can live in — in other words, products that let them publish, subscribe and crunch everyday information. Microsoft Office is a good product, but it isn't very well integrated with anything other than itself. A database company, on the other hand, could do some neat things to tie an office suite to a data warehouse or analysis engine.

The worst thing for users would be if Novell sells out to one of the software asset management companies, which will then try to milk whatever revenues are left from the installed base. This market may be mature, but the battle isn't over. I hope WordPerfect's buyer is thinking about changing the rules.



Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*



No comparison

In the article "CA to bike big iron fees" [CW, Oct. 9], it is mentioned that one client pays $180,000 for DB2 and $250,000 for CA-IDMS. Comparison between the two is meaningful only if we consider what we really mean by the names IDMS and DB2.

DB2 means only the database part. There is no transaction processing monitor. There is no dictionary (repository), no fourth-generation language (4GL), no report writers. All these are extra. Very often, one finds a plethora of third-party products filling the missing links in the DB2 product line.

With CA-IDMS, the core product includes a database and a dictionary with LUG2, a 4GL, a query tool and a Performance Monitor. Such an IDMS-DB/DC setup is functionally equivalent to DB2, CICS, query tools and a 4GL.

Runtime requirements for DB2 also are much more than those of IDMS. For example, IDMS runs in a single MVS address space, whereas DB2 needs at least three, apart from its dependence on TSO for batch jobs.

I hope *Computerworld* makes it a point to match apples to apples, especially when comparing serious mainframe products.

Manoo Tige
Editor, IDMS/SQL News
Oslo

Curiosity, my eye!

Gary H. Anthes hit the nail on the head in his Viewpoint commentary "Hollywood puts backers on pedestal" [CW, Oct. 2].

"Their only crime is curiosity." Sure! Curiosity about your bank account, and your credit-card numbers.

Amaryllis Beirne-Keyt
Systems administrator
W. P. Carey & Co.
New York

A heavy thought

Brett D. Arquette really dates himself when he says "core memory" ["Computer-room tours go downscale," CW, Oct. 23]. It has been a very long time indeed since I have seen a machine with the little magnetic donuts.

Incidentally, let's say that each core donut used to weigh 1/500 of an ounce. This would mean that the 14G-byte core in the Alpha server would tip the scales at an astonishing 14 million pounds. The old 8M-byte notebook would have 8,000 pounds of core memory. Of course, that's without parity. Adding parity bits would bulk it up by another half ton!

Joe Johnstone
Wilson, N.C.
johnstone@wkal-ian.mhs.compuserve.com

E-mail diatribe was right on money

While reading Ira Chaleff's "We're drowning in E-mail" [CW, Oct. 16], I couldn't help but laugh. He writes, "the act of monitoring everyone's comments across 20 databases is more befitting the KGB than front-line workers." What a relief that statement would be to all of the conspiracy theorists who tie up various Usenet newsgroups with their paranoid ramblings.

Really, Chaleff is right on the money when he states that we should stop waiting for better software to save us and instead try saving ourselves. We should think about eliminating all user-friendly mail tools in favor of something a little more cryptic. I submit that the original Unix mail utilities were a step in that direction. Far from intuitive, they frightened away all but those who had a definite need for electronic mail, daunting the uninitiated with the threat of having personal and private communications accidentally broadcast to the world.

I must admit that I frequently have the politically disastrous longing for the good ole days, when information systems professionals were regarded with something akin to respect and bandwidth was something to be used judiciously.

Raymond LaFrance
Westminster, Colo.
ralf@indra.com

More letters, *page 40*

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Bill Laberis, Editor in Chief, Computerworld, P.O. Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Verbatim

FROM A REPORT BY FORRESTER RESEARCH, INC. ON DESKTOP VIDEOCONFERENCING:

Despite the fact that Intel and others are crashing the price of desktop conferencing, the outlay required for a video-ready infrastructure is enormous.

The cost of video at the desktop is over $6,000 per seat — with end-user video hardware and software making up less than 25% of the total cost figure. The rest of the bill is a combination of the cost to upgrade the network and the price of a PC powerful enough to handle video's bandwidth and computation demands.

[Information systems] is worried about traditional issues like bandwidth and cost. But overwhelmingly, companies just don't have any business demand for the technology. To put it bluntly, IS does not consider a video call to a co-worker down the hall a compelling application.

FROM A REPORT BY THE U.S. CONGRESS' OFFICE OF TECHNOLOGY ASSESSMENT:

Though many small and midsize metropolitan areas and the outer suburbs ... are benefiting from ... the current revolution in information technologies, many central cities and inner suburbs will face disinvestment, job loss and fiscal difficulties.

By allowing more and more economic transactions to be conducted digitally ... information technology is reducing the importance of proximity. The decentralization of business, coupled with the expected increase in telecommuting, will allow households to move even farther out in search of lower cost and larger housing. As a result of this dispersion of jobs and people, metropolitan areas can be expected to become larger and more sprawling.

A new and reinvented economic development policy is needed to respond to the problems and dislocation from this technology revolution.

The right, and the wrong, time to buy

Geoffrey A. Moore



Every new technology goes through the phases of life. For IS, the trick is to know when to buy.

The more I work in the high-technology sector, the greater my appreciation for how the technology adoption life cycle affects vendors and customers.

If you try to rush adoption of a new technology before it's ready, as pen-based computer vendors did a few years ago, you might as well throw money off a bridge. Conversely, once people want to make the switch, they move en masse. Then the problem is keeping up with supply.

We have developed a six-stage model of the adoption life cycle to help address these challenges. The key question for corporate information systems managers is this: At what point during a product's life cycle should I buy? Here is how each stage of the cycle shapes up and how it affects IS professionals:

1. Early Market: A time when a highly innovative new technology has been introduced. The new technology requires a major infrastructure revamp to adopt, but it also promises fabulous benefits. Examples include Asynchronous Transfer Mode (ATM) networking, component-based software development and Internet-based commercial transactions.

At this point, buyers are seeking a breakthrough in competitive advantage, and vendors are linking up with experienced systems integrators.

2. The Chasm: A lull in the technology life cycle. Visionary "early adopters" have bought in, but the pragmatic "early majority" is still waiting to see how things shake out. Examples of technologies in this phase include object-oriented databases, desktop videoconferencing and color laser printers.

Warning! This is not a good time to buy. You are late to the early party, so competitive advantage opportunities have dwindled, but you are early for the mainstream, so you will still suffer all the pain of early adoption.

3. The Bowling Alley: The new technology is adopted by pragmatic customers who have niche applications that the old paradigm simply can't meet. Examples include Documentum's document management system for new drug approvals and Silicon Graphics' digital post-production system for the advertising and film industries.

4. The Tornado: Mass adoption of the new paradigm. This catapults a single vendor into market-leader status and makes its architecture the de facto standard. This is what happened with Windows 3.0 and didn't happen with Windows 1.0 (which was in the Early Market phase) or Windows 2.2 (in The Chasm phase). Other "Tornado" examples include Cisco routers, Hewlett-Packard HP 9000-class servers and SAP financial and manufacturing software.

In this phase, buyers want a timely migration to the new technology, while vendors just need to ship a reliable product when promised.

5. Main Street: Continued development of an established paradigm, focusing on lowering costs and/or adding application-specific value for various market segments. Examples of mainstream technologies include E-mail, relational databases and technical workstations.

Buyers want continued improvements in user productivity; vendors should be providing low prices, customized systems and good support.

6. End of Life: Support for this technology is being withdrawn, and customers who linger will expose themselves to increasing maintenance charges and the misfortune of lacking a smooth migration path to newer technologies. Examples: any software packages acquired by Computer Associates.

The key here, as in all things, is to appreciate your position relative to the marketplace and act accordingly.

Moore, a marketing strategist in Menlo Park, Calif., is author of *Inside the Tornado*. His Internet address is chasmgroup@aol.com

The promise and perils of on-line voting

Alan F. Kay and Roger L. Kay





At the dawn of the Information Age, way back about 1970, we thought that ubiquitous computing would turbocharge democracy by leveling the playing field to give the little guy, the outsider, a stronger voice.

As founders of the first on-line, real-time trading system, we thought we saw it happening. Our system, AutEx (for Automated Exchange), allowed brokers and institutions involved in buying and selling large blocks of stock to advertise to each other.

Democracy appeared to be erupting before our eyes as brokerage houses far from Wall Street suddenly found themselves on equal footing with the big boys in New York. Naturally, we projected this model onto the rest of society, expecting a great widening of economic and political power sustained by the spread of on-line systems. And, to be sure, networking has wrought substantial change in the economic sphere.

For example, in the fairly recent past, a few point sources such as Dow Jones reigned as the prime arbiters of stock price movement. Now, informed participants in newsgroups and chat rooms exchange key tidbits about a company long before the media catch on.

But alas, electronic access has yet to affect the distribution of political power seriously. By far the dominant mode of political communication remains broadcast (one-to-many). Reverse broadcast (many-to-one) is underexploited. Despite the channel of electronic mail, spontaneous mass communication on focused political issues is still not widespread.

Of course, reaching political leaders by network has certain pitfalls. Self-selection distorts results, for example. A question from a recent national telephone poll of 1,500 randomly selected households found that 78% favored the use of polling to convey public opinions to government leaders on legislation. The same question replayed on Prodigy drew only a 30% favorable response from the 30,000 subscribers who chose to answer.

Networking might simply empower a new class of actors — namely, motivated computer-literates — rather than increase general participation. Also, the danger of mob rule is always present in the electronic world. Government by flamethrower is not the same as democracy. And nothing prevents a malefactor from disseminating opinion-bending misinformation.

But caveats aside, democracy may truly broaden if institutions such as electronic town meetings take hold. The acceptance of reverse broadcasting would enable an instant referendum on any subject. As more U.S. households acquire the ability to reach a World Wide Web site, electronic public opinion-gathering might give way to actual voting.

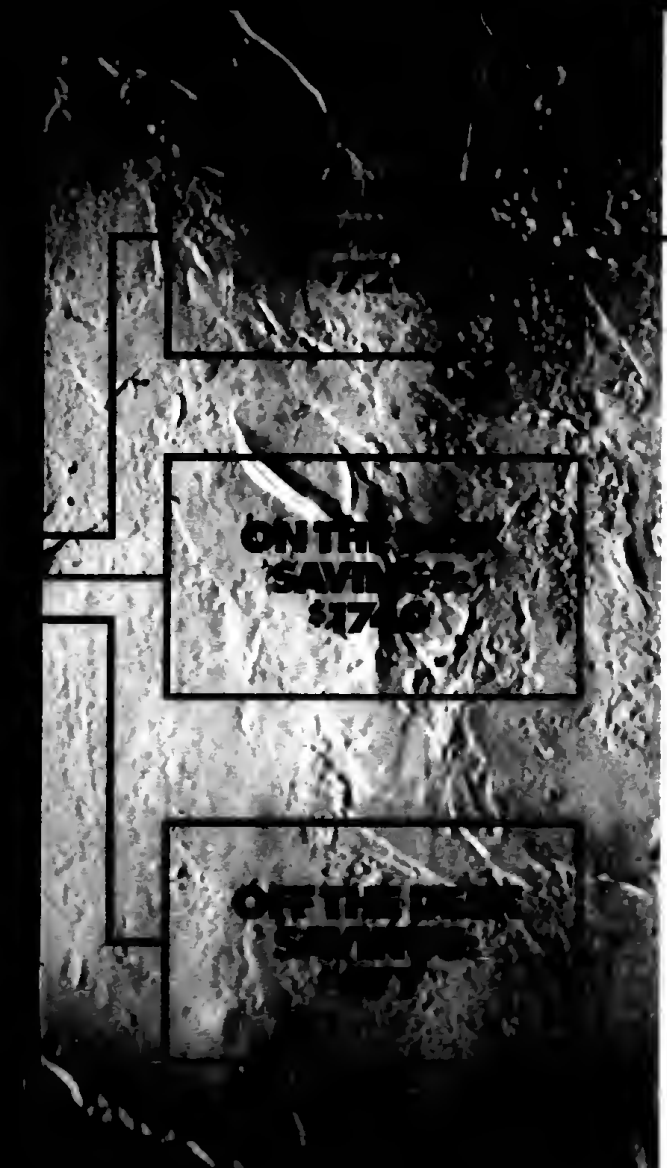
Whether electronic democracy evolves from the anarchy of today's Internet depends more on sociopolitical inclinations than on the availability of technology. The infrastructure for direct, informed voting is already in place.

Alan F. Kay researches public opinion in St. Augustine, Fla. Roger L. Kay is a writer in Wayland, Mass.

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It's in the day-to-day costs of maintaining a PC that add up over its lifetime. Like reduced-downtime. According to *PC Magazine*, Dell's average downtime is 30% below the industry average – and 10% below the average downtime of other Tier 1 companies. And we offer lower NOS support costs than the industry average, consistent industry-standard components, and installation assistance, to name just a few of the ways Dell could further reduce your PC lifecycle costs.

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CONTINUED FROM PAGE 36

Love/Hate article was affecting

When first I saw your "C/C++ Love/Hate" article [CW, Oct. 23], I was prepared to rail against the extreme positions that the opposing sides would take.

I, for one, am fed up with the oppositional, extremist rhetoric that has taken the place of thoughtful discussion in political and technical circles lately.

However, David Baer's thoughtful article that considered both sides of the C/C++ language's fitness for business processing issue, and the two clever pictures that accompanied it, did an excellent job of highlighting key issues of the debate. And the article did so without trivializing the merits of either side.

The article did include the expected name-calling of people who would consider a view opposing the author's. But that can be forgiven considering the author's unique perspective as the target of all insults delivered. Refreshing and well done.

Payson Hall
Consulting systems engineer
Catalysis Group, Inc.
Sacramento, Calif.
74040.1721@compuserve.com

Premier 100 choices puzzling

The basis for your selection of The Premier 100 [CW, Oct. 9] is deeply flawed. You profess that measurement of excellence in information technology is elusive, yet instead of addressing this issue (which would be constructive), you hide behind a mathematical formula.

In a nutshell, the formula says that "lean and mean" is good. What does this have to do with effective use of information? Did someone have great luck negotiating some contracts? Put them on the list. Did they slice all research and development and boost short-term profits? Put them on the list.

The only interesting data presented was where this group was compared to more "traditional" metrics. Given the standard deviations implied in the diversity of the sample, the bottom line was that they really weren't that different from the rest of the world in how they managed information technology.

Why would a computer journal swallow hook, line and sinker the nearsightedness of financial markets?

I always viewed information technology as a strategic, long-term asset to the corporation it serves. Your Premier 100 measures success of a different kind.

Doug Yeager
AVP Information Systems
Presbyterian Church (USA) Foundation
Jeffersonville, Ind.
djy@fdn.pcusa.org

Don't blame the Internet for risk

In "Internet security woes inflated, experts claim" [CW, Oct 16] the Internet itself is blamed for the fact that "unprotected software" is exposed to risk when passing between two parties.

That's like blaming the bedroom for the risks of unprotected sex.

In both cases, the participants know the steps necessary to protect themselves. It's just easier to ignore them and hope it happens to the other guy.

Howard Glassman
Vice President, information security
Primerica Financial Services
Duluth, Ga.
hglassma@ix.netcom.com

Issue is how good, not how old . . .

Let me get this straight. Josh Cohen advocates using age as a means of discrimination in hiring webmasters, and *Computerworld* thinks it is a good idea to publish this on the front page? ["Webmasters: Young cyberwizards strive to conquer on-line world," CW, Oct. 23.]

Are there any other forms of discrimination that you might advocate, such as gender, race, national origin, sexual preference or religion?

After all, don't these other attributes influence "the ability to combine left- and right-brained thinking" as much as age?

Computerworld would have done better to highlight the views of Robert Holt, also a twentysomething webmaster whose comments were more in keeping with the tone of the rest of the article.

Aside from Cohen's musings, nowhere in the article is there any substantiation of your subtitle, "Young cyberwizards strive to conquer on-line world."

The categorical imperative in hiring someone for a position must always be the applicant's demonstrated ability to perform a job.

Computerworld did a disservice to distract us from that guiding principle.

Elias Safdie
73404.1423@compuserve.com

. . . and IS pros of any age can apply

I liked your piece on webmasters but don't agree with your characterization that it is a challenge for the young, on-line "cyberwizard."

As your piece shows, there isn't only one definition for "webmaster," and there are a range of skills required for the job ranging from technical- to content-oriented.

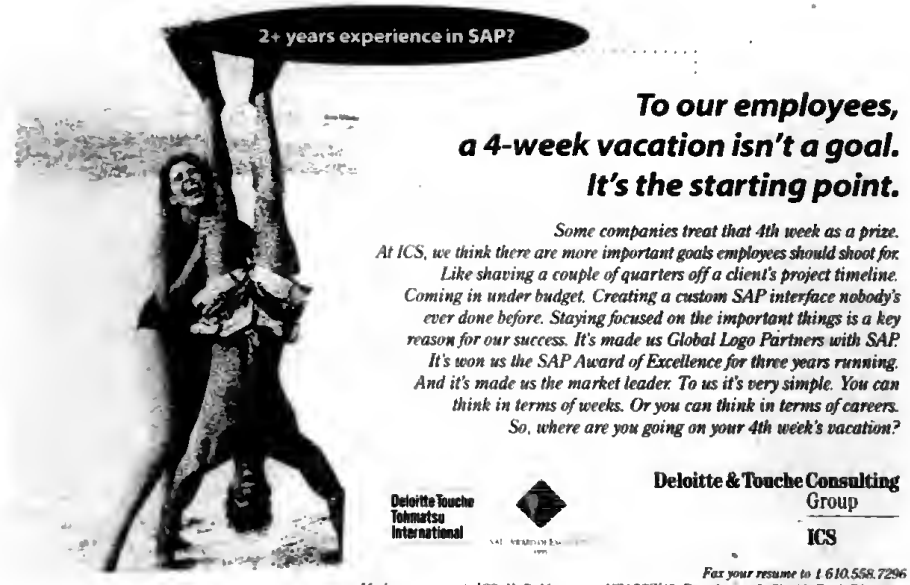
For many World Wide Web sites, the biggest challenge is the ability to structure, source and present large amounts of information so that people can quickly and effectively find what they need. This wisdom comes from people of all ages.

The next few years will be challenging as the Web matures.

We need IS folks to be part of this change, not see it as something they could do if only they were a few years younger.

It is an exciting time to be involved in the Web, no matter how young or old.

Tim Horgan
WebMaster Magazine
CIO Communications, Inc.
Framingham, Mass.
thorgan@cio.com



To our employees, a 4-week vacation isn't a goal. It's the starting point.

Some companies treat that 4th week as a prize. At ICS, we think there are more important goals employees should shoot for. Like shaving a couple of quarters off a client's project timeline. Coming in under budget. Creating a custom SAP interface nobody's ever done before. Staying focused on the important things is a key reason for our success. It's made us Global Logo Partners with SAP. It's won us the SAP Award of Excellence for three years running. And it's made us the market leader. To us it's very simple. You can think in terms of weeks. Or you can think in terms of careers. So, where are you going on your 4th week's vacation?

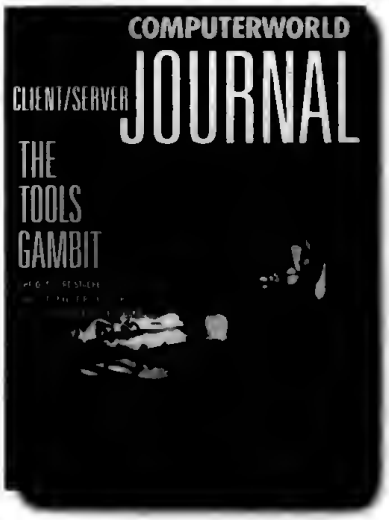
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November Issue Features

Cover Story: The Shakeout in Application Development

What's in store for users and vendors as the application development market changes and consolidates.

Vertical Market Focus: Brokerages

A look at how brokerages and investment banks are using client/server technology to manage their risks, and deploying this technology to help develop and manage new derivatives products.

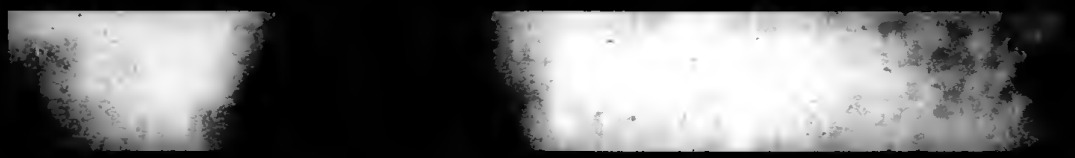
Product Focus: Application Development Tools

Our Firing Line feature takes a look at Forte 2.0.

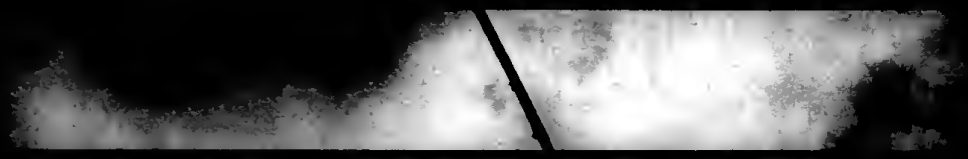
Careers Column: A former Cobol programmer relates the process of switching to a career in Notes development/administration.

COMPUTERWORLD CLIENT/SERVER JOURNAL

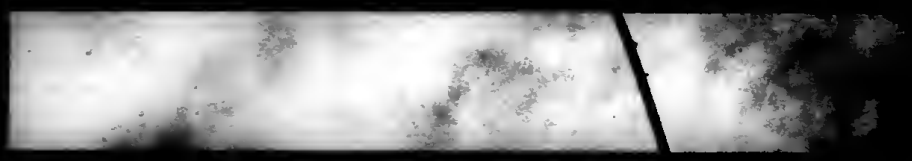
WHERE DISTRIBUTED COMPUTING MEETS BUSINESS OBJECTIVES



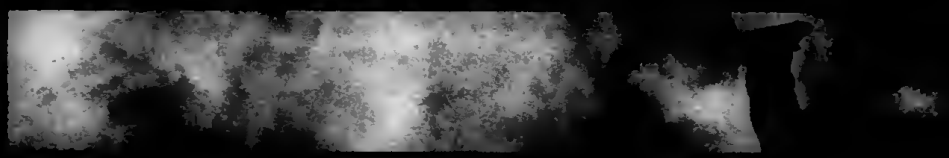
If if a a critical critical



hardware hardware component component



in in your your storage storage



system system fails fails.. will will

there there be be a a backup backup??

With backup after backup in IBM RAMAC, the answer is a resounding yes yes.

In the event of an actual emergency, it's quite comforting that the RAMAC™ Array Family of disk storage systems provides multiple levels of hardware backup to help keep your data safe and available. In fact, its data availability is the best of any high-end DASD storage system.

For instance, RAMAC has redundant power and cooling systems. If one fails, the other keeps running. If the power goes out entirely, a battery in each drawer enables data in cache to be written onto disk so it's not lost.

Can your storage system do this?

Even when things aren't life-threatening, the RAMAC Array keeps copies of data in both a cache and nonvolatile storage, protecting your data from cache failures.

At another level, self-diagnosis corrects problems automatically or alerts you and IBM if something needs attention. Even then, most parts can be changed and data recovered without taking you offline.



RAMAC then goes further with RAID 5 protection. RAID 5 saves data across multiple drives. If one fails, data is regenerated, without interrupting your applications. RAMAC is also the only system with a tri-level cache. It offsets the performance penalty once associated with RAID 5 protection.

Behind all this fault-tolerant technology are backups of the human kind. Namely, a worldwide network of storage experts.

Protection like this is why, in just its first year of availability, over 6,000 RAMAC systems were sold. And now with special leasing options, IBM can protect your future as well, making it easy to upgrade to future technologies when they're available. Call 1 800 IBM-3333, ext. QA101, or visit our Internet site at http://www.storage.ibm.com/storage for more (but not redundant) information.

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Dana Quitslund, a PeopleSoft software designer with a really pleasant commute.

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Dana Quitslund lives and works on Bainbridge Island, Washington. His office was designed by Wind and Tides, Ltd., a wholly owned subsidiary of Mother Nature, Inc.

Enterprise client/server solutions for finance, materials management, distribution, manufacturing and human resources

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Desktop Computing

PCs AND SOFTWARE • PORTABLE COMPUTERS

Pentium Pro's booster club

Vendors unveil spate of servers, workstations

By Jaikumar Vijayan

As expected, several major hardware vendors last week greeted Intel Corp.'s next-generation Pentium Pro chip with a raft of workstation and server products.

Vendors that unveiled systems based on the 32-bit, sixth-generation chip include IBM, Hewlett-Packard Co., Dell Computer Corp., Unisys Corp., Data General Corp., AST Research, Inc. and NEC Technologies, Inc.

Desktop market leader Compaq Computer Corp. didn't announce specific products but said it will deliver Pentium Pro-based servers and workstations in the first quarter next year.

Setting a trend

These announcements are expected to set the trend for a new class of relatively low-cost, standardized, single- and multiprocessor Pentium Pro-based products.

Based predominantly on Intel mother-

Pentium Pro, *page 56*

While a sample configuration of a Pentium Pro server will look like this by Q1 next year ...

- 2 CPUs
- 256K-byte cache per CPU
- 32M bytes of memory, expandable to 512M bytes
- Optional RAID

... it will eventually look like this

- 4 CPUs
- 256K-byte cache per CPU/512K-byte
- Up to 2G bytes of memory
- Hot swap disks, power, fans
- RAID 1, 3 and 5 support
- Up to 1,500 transactions per second

Mapping software navigates its way into corporate databases

By Mitch Betts

Desktop mapping software is finally joining the client/server world. MapInfo Corp. in Troy, N.Y., last week introduced MapInfo Professional, a revamped version of its flagship product that features direct hooks into the corporate database.

For several years, mapping users have been clamoring for easy access to the customer data locked up in corporate databases from Oracle Corp., Sybase, Inc. and others. MapInfo users previously could download data from those databases using SQL Data Link middleware, but the method was clunky and the data got old.

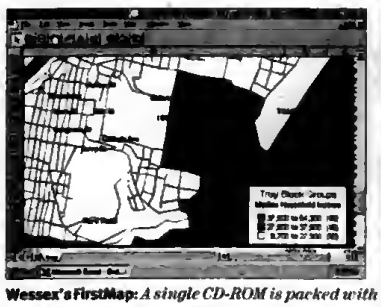
Instead of middleware, MapInfo Professional uses a built-in capability to allow simultaneous access to files from multiple remote databases. It downloads the necessary data for local use but maintains a link to the remote database so the local data can be refreshed or the corporate data updated — quickly.

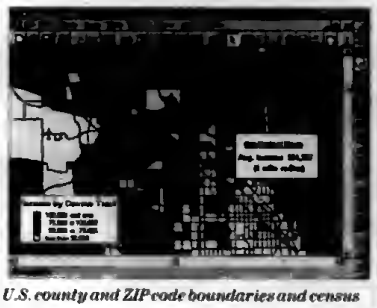
"Database access has been brought into the application, which is the way it should be. It's a very elegant solution," said James Rapinac, an analyst at Daratech, Inc. in Cambridge, Mass.

MapInfo Professional is compatible with Microsoft Corp. Windows 95 and supports OLE 2.0. It allows users to plop mapping objects in word processing documents and presentations. The MapInfo Professional version for Windows 3.1, Windows 95 and Windows NT costs $1,295 and will ship in December.

Also last week, users got another mapping option from Strategic Mapping, Inc. in Santa Clara, Calif. The firm introduced a product bundle called Atlas Se-

Mapping, *page 56*





Wessex's FirstMap: *A single CD-ROM is packed with U.S. county and ZIP code boundaries and census data. The product costs $69*

Copland may miss '96 boat

By Lisa Picarille

Copland in 1996 may be an even longer shot than Pat Buchanan.

Apple Computer, Inc.'s much-anticipated next-generation operating system, code-named Copland, likely will be delayed beyond its expected mid-1996 delivery date, according to sources close to the Cupertino, Calif., compnter maker.

Apple officials declined to comment on when System 8 will be generally available. However, an Apple spokeswoman said a series of Copland developer releases will be available this fall, followed by a beta version that will be shipped to a large number of customers by the middle of next year.

"We are not committing to when the golden master of Copland will be available because we will be enhancing the product based on feedback from the early release," the Apple spokeswoman said.

Earlier this year, Apple announced that the final version of Copland would ship by the middle of next year.

Bad news

If Apple doesn't ship Copland next year, it could be a major blow to the struggling computer maker, which is losing market share. Apple was counting on the revamped version of the Mac OS to help boost its sagging market share by leapfrogging the technical and graphical user interface innovations adopted by Microsoft Corp.'s Windows 95.

Copland's microkernel-based design and preemptive multitasking and multithreading capabilities also would help the Macintosh more effectively compete against Microsoft's Windows NT.

One industry watcher said the slippage is minimal. Apple is under such public scrutiny that the company is merely being cautious about promising a specific delivery date, the analyst said.

However, that same analyst agreed that if Copland's release slips into the first quarter of 1997, the repercussions for Apple could be staggering.

"If they slip into 1997, it would be horrible — as bad as you can get," said Pieter Hartsook, editor of "The Hartsook Letter," an industry newsletter in Alameda, Calif.

"The challenge for Apple next year is not Windows 95 on a Pentium machine, but Windows NT on a [Common Hardware Reference Platform] machine. Apple can't afford to give NT that time advantage out there in the market."

Wooed by Windows

Some of Apple's biggest users claim that a delay could push them to the Windows platform.

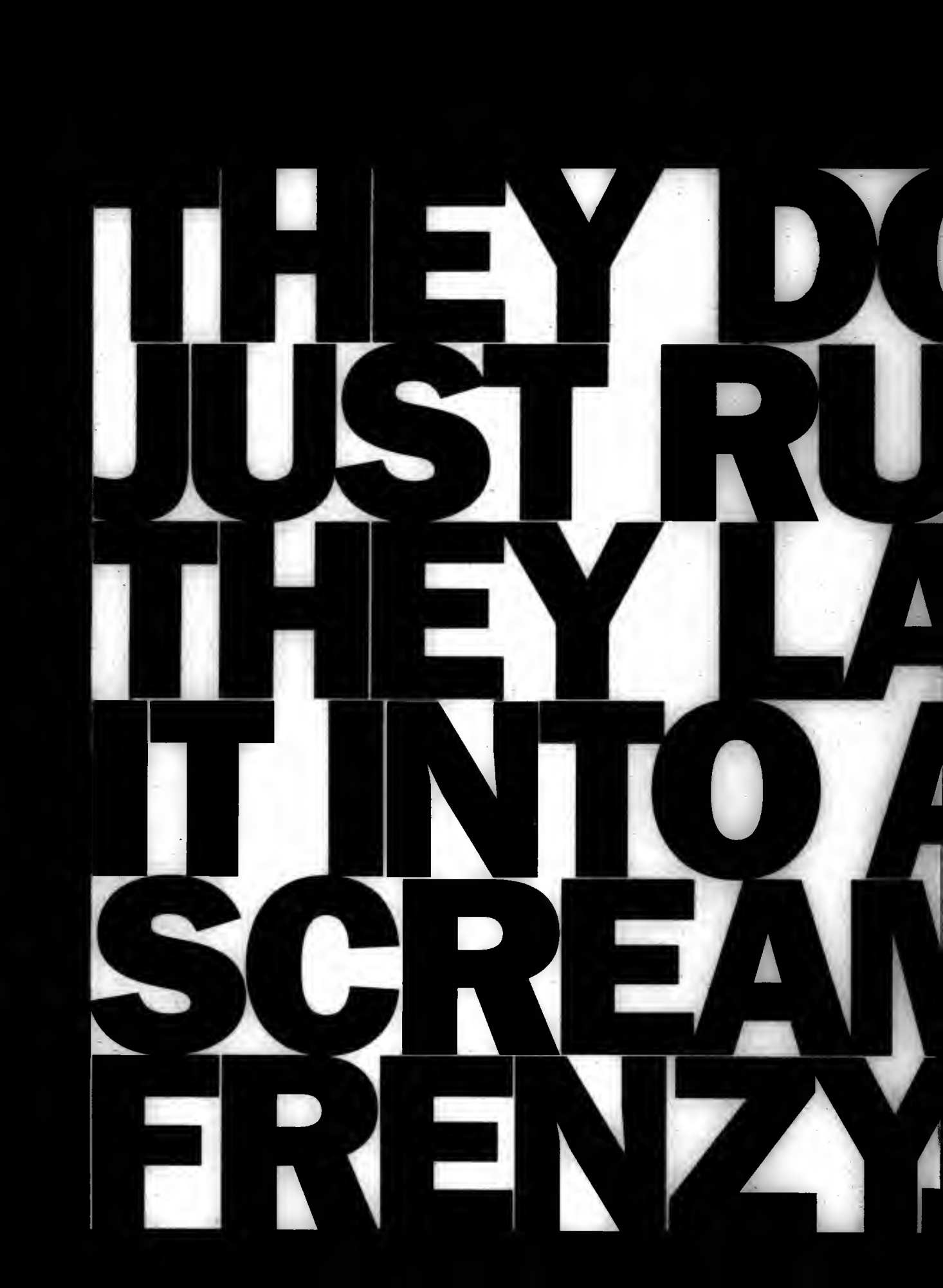
"I think Apple has done themselves in," said Mike Bailey, a systems analyst at Lockheed Martin Missile and Space, an aerospace firm in Sunnyvale, Calif., that has more than 6,500 Macintoshes and 2,000 PCs. "Copland is one of the key requirements for Apple in continue to be a viable platform. Without Copland, it makes it a

Copland, *page 56*

All systems go?

Apple's release dates for its systems software have been slipping further from its promises

	Apple's promised release	Actual or projected release date
System 7.5 to ship:	October 1994	October 1994
System 7.5.2 for PCI bus to ship:	May 1995	May 1995
System 8 (Copland) in alpha:	September 1995	December 1995
Copland in beta:	End of 1995	First-quarter 1996
Copland to ship:	Mid-1996	First-quarter 1997


THEY DO
JUST RU
THEY LA
IT INTO A
SCREAM
FRENZY

ON'T WINDOWS NT. ASH MING

On most machines, Microsoft® Windows NT™ Workstation is a pretty darn nice operating system. On these, it's a deadline-devouring, math-bashing, graphics-spewing, ravening jungle beast. These aren't off-the-shelf PCs with Windows NT tossed into the carton. They're tweaked, honed and buffed to extract every last ounce from Windows NT—without doing the same to your bank account. You get maximum productivity. No more two-computer desktops. The rock-ribbed reliability of Digital hardware. And the expert support of Digital's history-making alliance with Microsoft. Choose from a full line of Pentium™ processor or Alpha based models. Either way, the performance is just slightly to the left of Beyond Your Wildest Dreams. For details, call 1-800-DIGITAL, press 4, e-mail to moreinfo@digital.com or set your browser for http://www.digital.com. You've seen Windows NT run. Now watch it fly.

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PC card sails wireless seas

Mariner can download pager and cellular phone messages

By Mindy Blodgett

Mobile users can now download wireless messages and other information from their pagers and data-ready cellular telephones by using a new PC card from Motorola, Inc.'s PCMCIA Products Division.

Mariner is a 28.8K bit/sec. modem/fax/LAN combination card that incorporates cellular connectivity and wireless messaging. It is aimed at mobile warriors who want an Ethernet LAN adapter for the office and a modem for remote access, according to Motorola officials.

The modem works with Motorola's Messaging Partner software and cabling to offer remote access to enterprise networks, electronic mail and the Internet.

In addition, the modem also provides links to data-capable cellular phones and new Motorola Tango two-way pagers for wireless connectivity.

Mariner comes with Messaging Partner software and special cables for hooking up a laptop to a cellular phone or pager.

Different options

The modem can be used to send alphanumeric messages to pagers and to print, archive, cut and paste pager messages downloaded from a two-way pager.

For example, a store manager could alert a salesman via pager that the weekly price list is ready. A salesman could then use Mariner to link the pager to the laptop or a personal digital assistant and download the price list.

The new modem has allowed Scott Milener, director of marketing at Bulletproof Corp. in Los Gatos, Calif., to use his laptop and pager simultaneously to get the latest stock prices.

"The pager, equipped with our own software, alerts me there has been a stock change," Milener said. "I then book up the pager to the laptop and download the prices."

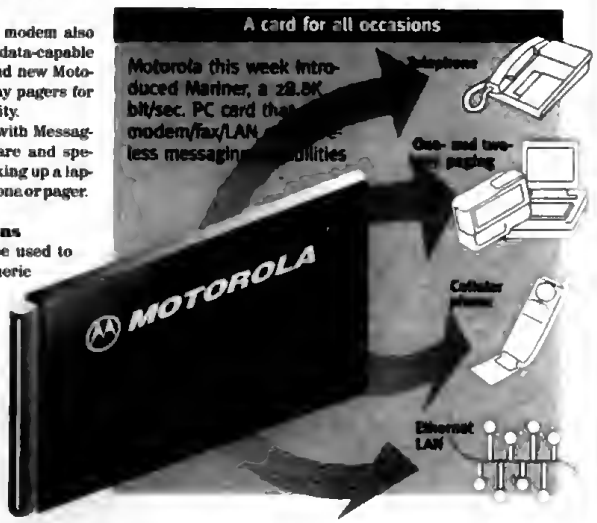
Remote 'net access

He also uses the card and cabling to his cellular phone to wirelessly dial up the Internet and cruise the Web on his laptop.

But Ken Dulaney, an analyst at Gartner Group, Inc. in Stamford, Conn., said cards with integrated pager and messaging capabilities, rather than with cables and software like Mariner, are the real wave of the future.

"I think you will see a trend with cards giving users dial-up access," Dulaney said. "This is a very interesting product, but ultimately you want cards with internal messaging and paging capabilities rather than having to use cables to hook up to pagers and cell phones."

Mariner will ship in January for $599.



Notebook makers rush to 120-MHz Pentiums

By Mindy Blodgett

Now that Intel Corp. has released the 120-MHz Pentium processor, middle-tier notebook makers are racing to unleash faster portables by year's end.

The parade of notebook announcements continued last week with new releases from AST Research, Inc. in Irvine, Calif.; Texas Instruments, Inc. in Temple, Texas; Gateway 2000, Inc. in North Sioux City, S.D.; and Panasonic Personal Computing Co. in Secaucus, N.J.



More productive

A report by the IDG Research Services Group for the Nolan Corp. found that 25% of portable users said the computers improved productivity.

The notebooks will enter a field already crowded with multimedia Pentium offerings from manufacturers such as the IBM PC Co., Toshiba America Information Systems, Inc., Hewlett-Packard Co. and NEC Technologies, Inc.

Industry observers said vendors will have to fight for attention. "There is a lot out there right now, and marketing will become increasingly important," said Randal Giusto, an analyst at International Data Corp. in Framingham, Mass.

The new notebook announcements include the following:

- AST is adding a 120-MHz Pentium processor notebook to the high end of its Ascentia 950/N line. The notebook will include an 11.8-in. high-resolution screen and a lithium ion battery. A model with a 800M-byte hard drive will cost $5,249, and a model with a 1.2G-byte hard drive will cost $5,649. The models will weigh in at 5.95 pounds and will be available this month.
- TI announced a 120-MHz addition to its Travelmate 5200 notebook. The notebook will offer a 10.4-in. active-matrix screen with a 1.2G-byte hard drive and integrated multimedia capabilities, including a built-in 16-bit sound card. The notebook, which weighs 6.7 pounds, will cost $5,199. It will ship later this month.
- Gateway 2000 took the wraps off a 120-MHz processor Gateway Solo notebook. The vendor's newest notebook will have a 10.4-in. high-resolution screen, 16M bytes of RAM, a 1.2G-byte hard drive, a modular CD-ROM drive and a 28.8 bit/sec. PC fax modem.

The 6.2-pound notebook will cost $5,999. It will be available later this month.

- And finally, Panasonic added a 120-MHz chip to its V4t multimedia notebook line. The notebook, which has an integrated CD-ROM drive, will have a 12.1-in. active-matrix screen with the option of Motion Picture Experts Group full-screen, full-motion video.

The notebook, which weighs 7½ pounds, has a 1.35G-byte hard drive and will ship next month. Pricing wasn't available.

Up-To-Date for Win 95 needs network features

By Cheryl Gerber

Beta testers last week said the most important feature of Now Software, Inc.'s time and contact management software for Microsoft Corp.'s Windows 95 isn't in the current beta release.

Users lauded the stability and features of the single-user test version of Up-To-Date for Windows 95, but they said what they want most is the networking capability in the Workgroup edition. That beta release will be out next week, according to Peter Adams, a senior product manager at Now Software in Portland, Ore.

"The network ability is the most important part of this product," said Ed Faulkner, a software and training manager at Prestonwood Baptist Church in Dallas. "We're hopeful the company will keep its promise and come out with the network ability [this month]."

On time

Industry analyst Jerry Michalski said the current beta appears to be stable enough to meet the Nov. 20 deadline.

Faulkner and another beta tester said they are anxious to use the Workgroup edition to link their Macintosh and PC users' calendars on a Novell, Inc. NetWare- or Microsoft Windows NT Server-based network.

"If the networked version works as promised, it will give us the ability to share calendaring in a cross-platform environment on a Novell NetWare or Windows NT server," said Dave Drexler, a beta tester and office automation specialist at Structural Dynamics Research Corp. in Milford, Ohio.

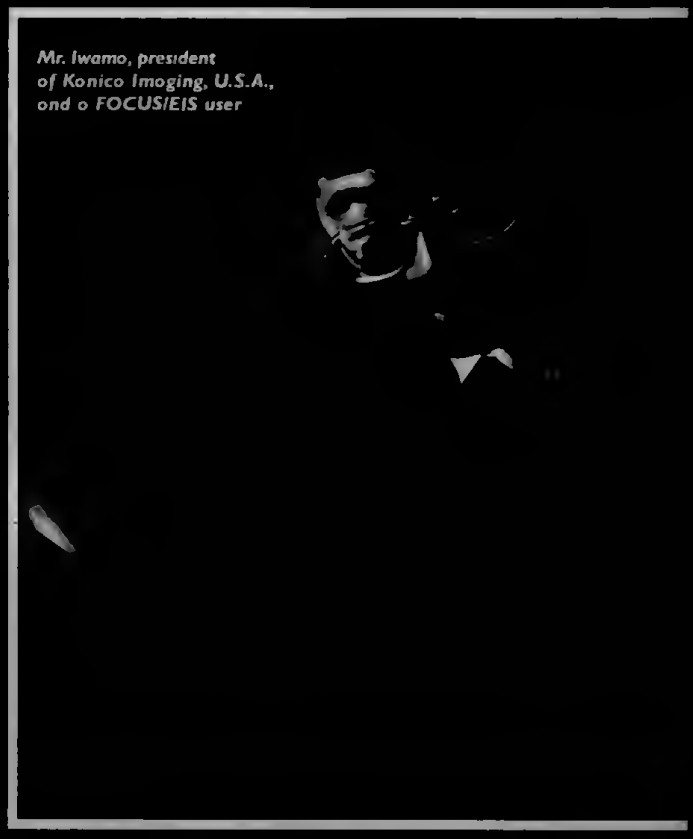
Drexler and Faulkner said they like the integration of the contact manager, scheduler and calendar in the current beta version. "The integration of names, addresses and events in one module in the Windows 95 version is solid. And the interface is good," Faulkner said.

An analyst and another beta user concurred. "This product has never made my system crash, and it doesn't take up a lot of disk space. It's stable and quick," said Jerry Michalski, an analyst and managing editor of the "Release 1.0" newsletter in New York.

Michalski said a front-end utility in the Windows 95 single-user beta program works well because users don't have to open the application to access it. The utility includes QuickDay, QuickContact, QuickPad and QuickAccess Manager.

Up-To-Date for Windows 95 contains support for telephony, messaging and Microsoft's OLE 2.0. The single-user version will ship Nov. 20, and the Workgroup edition will ship Dec. 20. The Workgroup product contains both client and server software.

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Cormine Morello
IS Director
Konico Imoging, U.S.A.

ESP It's an abbreviation for "Encouraging, Striving, Providing"... the company motto for Konica Imaging, U.S.A. It's also the name of Konica's new suite of killer apps for decision-support developed in just 10 weeks using FOCUS/EIS for Windows.

INSTANT ON-SCREEN TREND ANALYSIS

With FOCUS/EIS, Konica replaced thousands of pages of printed reports with on-screen graphical snapshots of sales performance, profit margins, and buying trends. Color-coded exception analysis allows Konica managers to pinpoint critical trends in a matter of seconds. And virtually any summary number or screen graphic can be programmed as a hot spot for point-and-click drill-down to more detailed information.

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FOCUS/EIS for Windows gives Konica managers instant access to data hosted on its midrange computer systems. All the screens are data driven, which means the graphics and summary numbers change automatically whenever the data is refreshed. The graphical interface is so intuitive, even Konica executives with minimal computer experience began using the system with almost no training.

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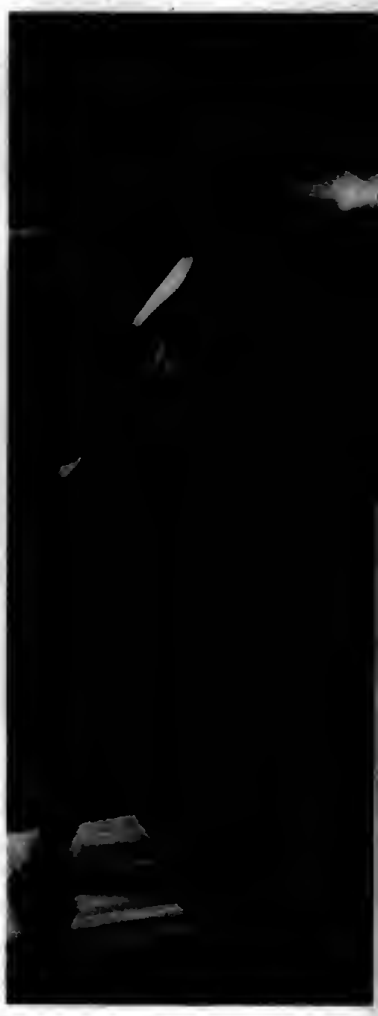
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Windows

CONTINUED FROM PAGE 1

Interviews with 11 large companies revealed that users have concerns on several fronts, including the following:

- NT's ability to handle large transaction volumes.
- Microsoft's ability to service and support large corporate enterprises.
- The prospect of their becoming too reliant on a single vendor for all of their enterprise computing requirements.

All in time

But just give Microsoft time — two to four years, by many users' estimates. By then, they believe, Windows NT Server will have evolved into an industrial-strength operating system — as did Unix, the current server stalwart.

Microsoft executives don't deny that they still need to articulate their strategy for corporate America. "We're new to the [enterprise] business, and it takes a while to explain what we are about," said Richard Tong, general manager of Microsoft's Business Systems Division.

"I wouldn't say there is confusion, but I do go to meetings every day where people say 'please explain your story,'" he added.

Also, it has only been in the past 18 months or so that enterprise client/server software vendors have begun to port their products to run on NT (see chart). As these products begin to ship in volume, they could be a major boost to Microsoft's enterprise ambitions.

"Microsoft is relying on [enterprise business software vendors] PeopleSoft, Dun & Bradstreet and Marcam Corp. to be their interface to the enterprise business layer," said Ed Black, director of client/server solutions at Aberdeen Group, Inc., a consulting firm in Boston. Without these applications, what Microsoft has to sell is an operating environment, Black said.

Top concerns

For now, though, heading users' list of migration issues is concern that NT Server may not scale up sufficiently to process the transactions of an entire enterprise. How well a consumer-oriented software empire can fulfill corporate users' 24-hour support requirements is another big issue.

"Right now, NT doesn't scale up to what we need, and I don't think all of the utilities are there either," said Phil Hoekstra, manager of information and technology architecture at $8.2 billion Monsanto Corp. in St. Louis. Monsanto is also deploying SAP AG's client/server R/3 software.

"But if you look at Unix seven years ago, we would have said the same thing," Hoekstra added.

Microsoft's Tong said users' concerns about the scalability of NT should subside as more and more powerful processors, such as the new Pentium-based machines, continue to hit the market.

To hedge their bets, some big companies, including Bankers Trust, which has some $90 billion in assets, are deploying NT on servers now but only in "a very controlled way in some production environments," Friedman said. Other than that, Unix remains the server operating system of choice.

Still, other companies such as $500 million Harman Consumer Group in Chatsworth, Calif., are running file, print and even application servers on NT. But to run large production databases, such as the Oracle Corp. database at the heart of its 400-user SAP R/3 software system, Harman relies on Unix.

Unix has a far richer shell scripting language and enables servers across a network to automatically share files, which NT does not, said Huck Shapiro, Harman's vice president of IS.

Meanwhile, NT's ability to handle massive volumes of data is Ricker's chief concern at BellSouth. "We have over 21 million access lines, and we literally bill 1 million customers every day in a 22-day billing cycle," he said. "There are dimensions to that kind of enterprise that a company that has been PC-based is not going to understand."

The decision looming for the Vanguard Group, a mutual funds company in Valley Forge, Pa., is whether to migrate 4,000 desktops from OS/2 to Windows NT.

"Win 95 is not the appropriate Microsoft product to compare to OS/2 at the desktop. We believe NT is the one that is appropriate at the desktop," said Bob DiStefano, senior vice president of information technologies at Vanguard.

But even if Microsoft addressed all of users' issues, the fact remains that many companies simply are not in the financial position to migrate. In most cases, they have not yet realized the full return on their investment in moving from mainframes to Unix-based systems.

Status report

The following are the Top 10 client/server applications vendors by application revenue.

Vendor	Annual revenue*	Number of installations	Server platforms
SAP AG	$1B	3,000 (R/3 client/server product)	Unix, Windows NT, Microsoft's SQL Server
Dun & Bradstreet Software	$350M	2,220	Unix, Windows NT
Oracle	$154M (From applications, not databases)	2,300	Unix (Windows NT by the end of Q3 1996)
Hyperion Software	$137M	2,300	Unix, Windows NT
Baan	$123M	1,300	Unix (Support for Windows NT announced, but no delivery date set)
PeopleSoft	$113M	700-plus	Unix, Windows NT, OS/2, VAX/VMS, Alpha OpenVMS (Support for SQL Server 6 by year's end)
Lawson Software	$75M	2,050	Unix (Plans to deliver applications on Windows NT second half of 1996)
Platinum Software	$60M**	400	Windows NT
Great Plains	$43M	4,300 (graphical client/server applications)	Unix, Windows NT
Computer Associates	Not broken out by product	10,000-plus for CA's ManMan and Masterpiece/2000 client/server business applications	Unix (ManMan); Unix, MVS, AS/400, VAX/RMS (Masterpiece/2000); (Windows NT scheduled to ship Q4 1995)

*From client/server applications **Estimate from International Data Corp., Framingham, Mass.

Source: The vendors

Briefs

Automatic help arrives

Platinum Technology, Inc. recently announced Apriori Hands-Free, a software tool for help desks designed to automatically answer questions from users by electronic mail or the Internet. If Apriori's automatic software can't handle the problem, it routes the request for help to support staff. The software will track steps taken to solve a problem and the frequency of particular problems. The software is priced at $10,000 per server and will be available by the end of the year. It runs on Hewlett-Packard Co.'s HP-UX, IBM's AIX and Sun Microsystems, Inc.'s Solaris.

IBM PC Co. cuts European prices

The IBM PC Co. in Europe has cut prices on its corporate desktop line by as much as 10%. Prices of the IBM PC 300 and 700 lines, both introduced a year ago, have been reduced across the board, company officials said. The PC 330, configured with an Intel Corp. 75-MHz Pentium processor, a 540M-byte hard drive, 8M bytes of RAM and two PCI slots, received the greatest price reduction — from 1,145 pounds ($1,670) to 1,035 pounds.

CICS client goes beta

Client versions of IBM's CICS transaction processing monitor with object-oriented interfaces and object class libraries were due for beta testing late last month, IBM said. OS/2 and Windows clients will be supported initially, with general availability due in early 1996.

Pentium chips take a dip

Relentless price cutting on Intel Corp. Pentium chips has shifted some high-end 120- and 133-MHz Pentium-based configurations into the sub-$2,500 mass-volume market.

Dell rolls out its Pentium PCs...

Dell Computer Corp. last week launched 24 PCs based on a wide variety of Pentium processors, including the 120- and 133-MHz chips. Prices start at $2,310 for a 120-MHz system with 8M bytes of RAM, a 540M-byte hard disk, 2M bytes of video RAM and a monitor.

... and HP rolls out its machines

Hewlett-Packard recently introduced its VL Series 4 PCs based on the same chips. A 120-MHz system with 8M bytes of RAM and a 1G-byte hard disk costs $2,105.

Compaq, Intel team up

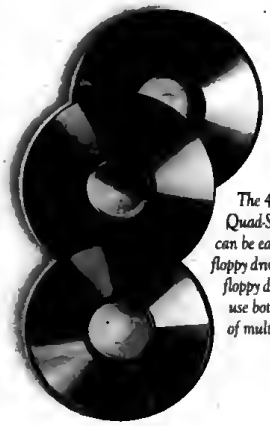
Compaq Computer Corp. and Intel last week announced that they will comarket integrated desktop conferencing products based on Intel's ProShare Personal Conferencing technology. Under the agreement, Compaq will integrate Intel's full range of interoperable data conferencing and videoconferencing products, including the ProShare Video System 200, which enables Intel-based PCs to conduct videoconferences and data conferences.

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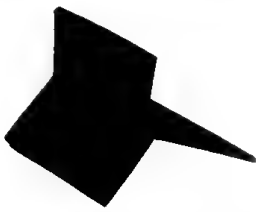
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Even the XPi's smart battery is unique. Its onboard microprocessor is designed to help every cell receive the maximum possible charge.

Of course, there's more to this notebook than long battery life. The XPi's active matrix SVGA color screen can display up to 50 percent more information at up to 600x800 resolution. Along with 16MB of RAM and a 1.2GB hard drive, it helps you get the most out of every minute of the battery's power.

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CONTINUED FROM PAGE 45

difficult decision to stay with Apple's platform. At some point, I have to say, 'OK, what are my alternatives, what do I want to start working with now?' "

Earlier this year, Lockheed considered dropping the Macintosh in favor of PCs with Windows 95.

That plan was put on hold in anticipation of the Mac OS and the Common Hardware Reference Platform being developed by Apple and IBM.

Other Macintosh users agreed.

"It's no longer of question of how long will I wait for Apple," said an IS manager at a large East Coast manufacturing firm who requested anonymity. His company has hundreds of Macintoshes. "Now the question becomes how can I justify waiting for Apple to deliver its new operating system when there are comparable solutions such as NT that are already available?"

Mapping

CONTINUED FROM PAGE 45

lect, which includes desktop mapping software with a streamlined user interface and 2G bytes of data on one CD-ROM. The bundle is available immediately and costs $1,295.

Meanwhile, mapping vendors are releasing lower-cost, standalone versions that have fewer analytical and customization features. For example, Environmental Systems Research Institute, Inc. in Redlands, Calif., has announced -BusinessMap, a package for analyzing sales territories. It costs $99.95.

These low-end packages are positioned between the spreadsheet applets, such as DataMap within Microsoft Excel for Windows 95, and products such as MapInfo Professional.

"The segmentation makes the market more confusing, but it means users can buy just what they need," said Nora Sherwood, editor of *Business Geographics* magazine in Fort Collins, Colo.

The price of basic "commodity" data for use in low-end mapping packages is falling through the floor, Sherwood noted. Wessex, Inc. in Winnetka, Ill., is now offering FirstMap, a single CD-ROM packed with U.S. county and ZIP code boundaries and census data. It costs $69.

Pentium Pro

CONTINUED FROM PAGE 45

boards and reference designs, high-end Pentium Pro implementations are expected to achieve near-minicomputer performance, according to most observers [CW, Oct. 30].

But don't expect to see such highly scalable, symmetrical multiprocessing (SMP) and massively parallel processing (MPP) servers based on the chip until at least the second half of next year, analysts said. SMP and MPP operating system support is expected to start maturing at that time.

Support is key

"It would be a worthless advantage to buy a Pentium Pro box just because it is Pentium Pro. The software support has to be there," said John Williams, MIS manager at Priority Pharmacy in San Diego.

Most of the products announced last week were mainly single- and dual-processor, Microsoft Corp. Windows NT "personal" workstations and servers.

The systems will start shipping in volume in the first quarter next year. Starting prices for the systems will range from $4,500 to $5,000.

The systems are basically turbocharged 150-MHz Pentium Pro versions of current high-end Pentium systems. But they offer larger memory configurations, powerful graphics capabilities and greater connectivity than what is currently available (see chart, page 45).

Products announced last week include the following:

- **HP's dual-processor Vectra XU 6/150.** The system comes with 16M bytes of RAM that can be upgraded to 256M bytes; integrated Ultra SCSI controllers; an integrated 10BaseT/100VG AnyLAN card; and integrated video and three-dimensional graphics acceleration. Pricing will start at around $5,100.
- **NEC's PowerMate Pro 150.** This product comes with 16M bytes of memory; a 1.6G-byte hard drive; Fast and Wide SCSI; and a six-speed CD-ROM drive. PowerMate Pro 150 has a starting price of $4,899.
- **Unisys' dual-processor, Model SVD Pentium Pro server.** This server features 32M bytes of RAM, which can be expanded to 512M bytes; dual Peripheral Component Interconnect and Extended Industry Standard Architecture buses; Fast and Wide SCSI; and an optional RAID subsystem with a capacity up to 24G bytes. Pricing for the server will start at $6,200.



"Initially vendors are going to focus on bringing out the Pentium Pro on high-end desktops," according to Cheryl Currid, president of Currid & Co., a consultancy in Houston.

"They will have to deal with the issue of fine-tuning operating systems and applications to take advantage of the Pentium Pro" before larger implementations become widely available, Currid said.

"It is like putting a Ferrari engine in a Volkswagen," according to John Dunkle, president of Workgroup Strategic Services in Portsmouth, N.H.

Pentium Pro really comes into its own when it is used in highly scalable servers, Dunkle said. But such systems won't be available until late next year, he added.



Avid Technology, Inc. has introduced Real Impact, a 32-bit video editor.

According to the Tewksbury, Mass., company, Real Impact lets users create high-quality video content for multimedia presentations, CD-ROM titles, interactive training and internet distribution.

Real Impact lets users select video image quality and includes built-in multimedia management tools. It can import and export standard video, audio, animation and graphics file formats to create digital content for multimedia productions. It also has multiple levels of undo and redo.

Real Impact costs $2,995.

▶ *Avid Technology*
(508) 640-6789



Avid Technology's *Real Impact, 32-bit video editor*

Synaptics, Inc. has unveiled the HR 1200 Handwriting Recognizer, a product for pen-based computing systems.

According to the San Jose, Calif., company, the product uses neural network technologies that are programmed by learning from multiple examples of handwriting styles instead of programming from rule sets.

The HR 1200 Handwriting Recognizer will run on a minimum 25-MHz Intel Corp. 80386-based system. It is compatible with Windows for Pen Computing 1.0.

The HR 1200 Handwriting Recognizer can be licensed for $19 per unit in quantities.

▶ *Synaptics*
(408) 434-0110

Triton Technologies, Inc. has introduced CoSession 6.0 for Windows.

According to the Iselin, N.J., company, CoSession 6.0 for Windows lets a PC in one location operate remotely or access a second PC via modem, serial port or network connection.

It has intelligent file transfer capabilities that update only portions of files that have changed, increasing transfer speed. It also features file synchronization and cloning for handling file management tasks between two computers.

CoSession 6.0 for Windows allows the CoSession Host to wait for calls from multiple communication protocol types at the same time. It lets users perform remote control functions while the system is busy performing file transfers. It includes Windows-based Host and Viewer software.

CoSession 6.0 for Windows costs $80 for a two-PC package. Volume and corporate site licenses are available.

▶ *Triton Technologies*
(908) 855-9440

Personal Bibliographic Software, Inc. has introduced ProCite 3.1 for Windows, a product for managing bibliographic references.

According to the Ann Arbor, Mich., company, ProCite 3.1 for Windows manages the details associated with searching, sorting, formatting and outputting bibliographic data, including reference information, notes and keyword references.

It lets users share record layouts, search strategies and content lists across multiple databases.

ProCite 3.1 automatically links in-text citations within a Windows word processing document to the appropriate reference in the ProCite database. Users can click on ProCite to insert the correctly formatted in-text citations and generate a fully formatted bibliography, which is placed at the end of the document.

ProCite 3.1 for Windows requires Microsoft Corp.'s Windows 3.1 or later, a hard disk and 4M bytes of RAM. It costs $345.

▶ *Personal Bibliographic Software*
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Data Description, Inc. has introduced Data Desk 5.0, a statistical software product for the Macintosh.

According to the Ithaca, N.Y., company, Data Desk 5.0 is statistical analysis software that includes an integrated suite of tools for discovering patterns in data. It has a graphical interface and several data displays for data management and data editing.

Data Desk 5.0 includes common traditional statistical analysis methods such as multiple regression, full general linear models and principal component analysis.

Data Desk 5.0 costs $625. Full-time students can buy a nontransferable license for $99.

▶ *Data Description*
(607) 257-1000

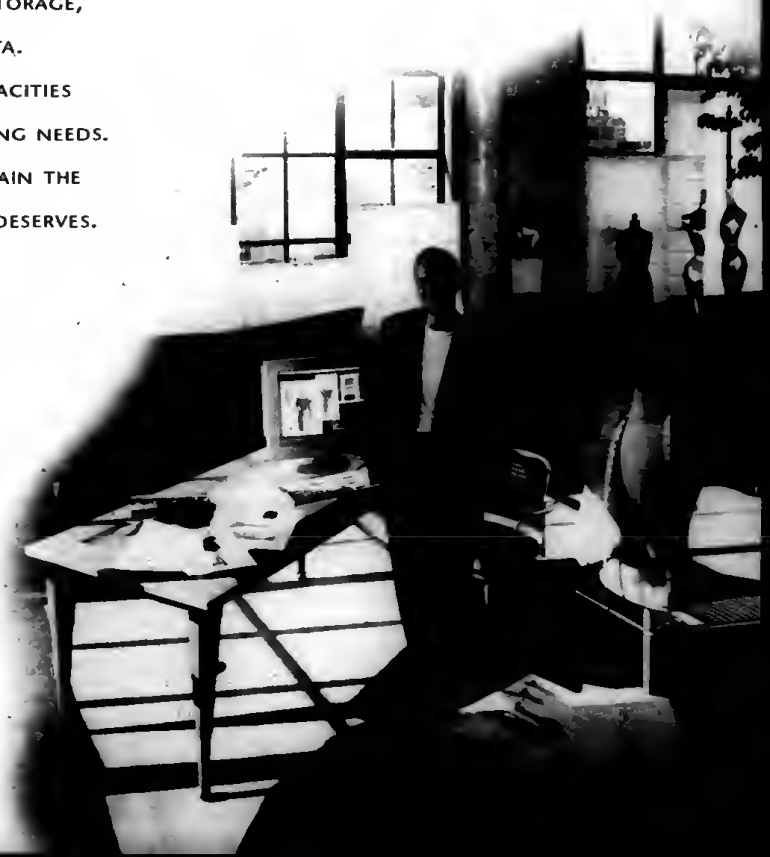
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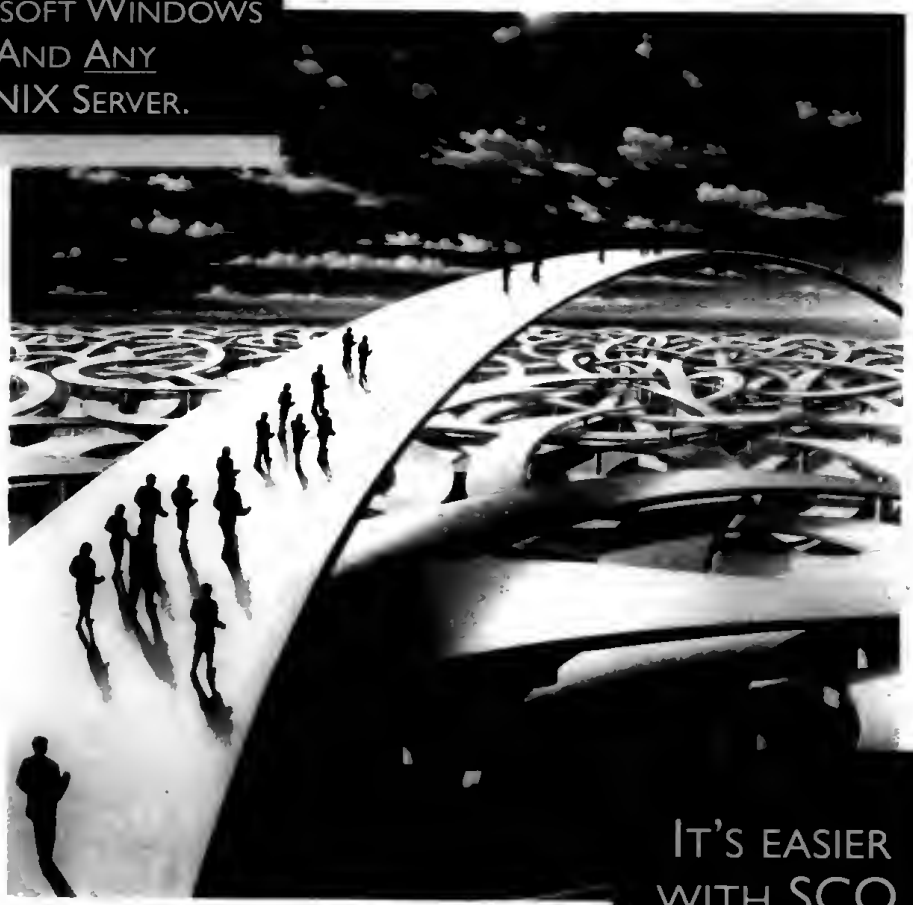
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IMAGING EXPO HIGHLIGHTS, 60
NEW PRODUCTS, 65

Workgroup Computing

LANs • SERVERS • SOFTWARE FOR GROUPS

Transarc delivers DCE software for Sun users

By Jean S. Bozman

Users of Sun Microsystems, Inc. workstations and servers will get a new take on their Distributed Computing Environment (DCE) software with Transarc Corp.'s shipment last week of DCE 1.1 for Sun's Solaris Unix systems.

DCE is a set of software modules, or middleware, that supports a mixed-vendor network of distributed computers. Users and analysts expect the DCE 1.1 code to simplify administration of Sun-based DCE servers.

Key features of the Transarc release include integrated management of distributed DCE computers, improved security and simplified development of DCE-aware applications that allow users to tap a wide array of distributed servers (see chart, page 69).

Users said the new code will help them manage DCE networks more easily than the older DCE 1.0.3 code. David Cordaer, a systems integrator at NASA's Langley aeronautic research facility in Hampton, Va., said assigning user identification and DCE security permissions can be time-consuming. "You have to call the other sites to get the password rights from their systems, so it can be a really big hassle," he said.

The new software allows DCE "domains" to trust one another, reducing the need for administrative setup calls, he said.

"We're looking forward to it," said Duane Mooney, a DCE project leader at GE Capital Mortgage Insurance Corp. in Raleigh, N.C. Otherwise, he said, "we would probably continue to develop some software ourselves" to handle complex DCE management tasks.

Analysts said several Unix vendors have already shipped DCE 1.1 code with their operating systems. These include IBM's AIX and Hewlett-Packard Co.'s HP-UX. According to Chet Geschickter, research director

DCE, *page 69*

Comdisco offers outsourcing

By Thomas Hoffman

Comdisco, Inc. recently began offering a broad range of selective desktop asset management services designed to help organizations reduce costs, increase control and improve productivity.

Comdisco's SelectSourcing service addresses the complete life cycle of desktop hardware and software asset management (see chart). The Rosemont, Ill.-based firm joins the ranks of other vendors, such as I-Net, Inc. and Digital Equipment Corp., that also provide discrete desktop asset management services to customers.

At your service

Comdisco's desktop asset management services include the following:

SERVICE	WHAT IT IS
Asset Management Planning Service	Includes cost analysis, benchmarking, business process redesign and information technology asset database development
Life-Cycle Management Service	Covers EDI-based leasing and procurement, configuration management and installation
Productivity Enhancement Service	Offers help desk support, maintenance, training and network management in conjunction with third-party vendors
Business Continuity Service	Helps to minimize the risk of loss from a disaster through business impact analysis studies, recovery plan development, data backup and restoration and network recovery

Growing trend

The trend toward selective desktop asset management outsourcing is expected to mushroom as corporate PCs become more widely viewed as commodities. "It's a good thing — [outsourcing] will change budgeting to a capital expense and help organizations focus on leveraging their PCs more effectively [rather] than focusing on support," said Waverly Deutsch, an analyst at Forrester Research, Inc. in Cambridge, Mass.

As part of its SelectSourcing service, Comdisco will work with best-of-breed facilities management vendors that specialize in a particular discipline — such as MicroAge, Inc. or Unisys Corp. — for help desk support, said Bill Kelly, senior vice president of desktop services at Comdisco. "As the channel for desktop equipment is consolidating and changing, many companies are developing high-quality services that are unique to them. As such, we will direct our customers to those specific channel services," Kelly said.

Comdisco's new asset management offerings sound finger-lickin' good to Norm Lippay, manager of LAN planning at KFC Corp. in Louisville, Ky. KFC already outsources its help desk support to Stream and is about six months away from the possibility of outsourcing its core asset management functions. "It's a lot more attractive to be able to pick and choose the outsourcing pieces [rather] than go with an all-or-nothing approach," Lippay said.

Kansas drivers

Kansas' Division of Vehicles installed an imaging and workflow system in its Driver Control and Driver Review departments and gained the following improvements:

- Decreased number of steps to process driver records from 27 to nine
- Saved 30 hours per week searching for back files
- Saved 20 hours per week in clerical work
- Decreased telephone inquiries from seven to three minutes per call
- Saved $227,000 in labor costs through staff reduction
- Freed up 1,624 sq. ft. of office and warehouse storage space

Vehicle division puts imaging in driver's seat

By Tim Ouellette

Back in 1991 when the governor of Kansas appointed Betty McBride to run the state's Division of Vehicles, McBride was surprised to find employees drowning in a sea of paper and backlogs.

"There was such a backlog and so many complaints and so many paper files, I would ask, 'Is this our storeroom?' And the workers would say, 'No, this is our office,' " said McBride, director of the division.

A year later, after receiving up to 75 complaints daily about service and witnessing 14-month backlogs, McBride, with the backing of the governor, started to look for an imaging system to stem the tide. She wanted not only to get rid of the bulk of the paper plaguing the division but to change the process for managing driver records.

Now, thanks to an imaging and workflow system that the division has implemented, there is no backlog at all in those areas. Space and time are also being saved, and a number of steps in the administrative process have been changed or completely removed (see chart).

Employees can immediately view images of documents along with driver information stored in a mainframe database. In addition, more and more departments want to get on the system after seeing its success in the Driver Control Bureau and the Driver Review Section.

Imaging software transfers and stores paper documents into electronic image files. Workflow software automates and manages the flow of work items, which are often images, throughout a company.

And the winner is...

McBride has settled on imaging and workflow software from FileNet Corp. in Costa Mesa, Calif., which currently tracks about 2½ million records. FileNet, which the state chose because of its strong workflow software and ability to integrate with the state's mainframe, designed the whole imaging system, said Gary Carter, bureau chief of Driver Control. IBM was among the competitors for the project.

The old system of managing driver records was completely paper-based, with workers spending lots of time searching back files for the proper documentation. The current imaging system has about 58 users, including Carter. It processes roughly 8,000 documents a day related to identifying problem drivers for the Driver Control Bureau or drivers with medical or vision problems for the Driver Review Section.

As other areas in the Division of Vehicles begin to use the imaging system, it helps curtail the high cost — about $1.5 million — of the FileNet

Vehicle, *page 69*

DarkStar takes off from workstation launchpad

Data View



Engineers at Lockheed-Martin Corp. and The Boeing Co. designed the DarkStar military reconnaissance aircraft entirely on IBM RS/6000 Unix workstations. Doing all the design and simulation work on-line meant that no physical model was built and the usual year-plus of development time was reduced to just 10 months, the engineers said. The first air test of the $10 million, 15-ft. unmanned craft, which has a stealth radar profile, is scheduled for December. "We did not do any mock-ups at all," said Bob Fischer, chief engineer at Lockheed- Martin's Skunk Works site in Palmdale, Calif. "That would have taken six months."

Linking RS/6000s

WAN technology from Clam Associates ships

By Jean S. Bozman

RS/6000 users will get a new way to cluster remote servers when Clam Associates, Inc. ships new software.

GeoHA software from Cambridge, Mass.-based Clam links two IBM RS/6000 systems. The software is aimed at users who are concerned about processing interruptions due to natural disasters or electrical outages. Industry analysts said they believe it is one of the first wide-area network clustering systems for Unix, although mainframes have used similar technology for many years.

GeoHA adds WAN links to Clam's well-established High Availability Clustered Multiprocessing (HACMP) clustering technology for the RS/6000. HACMP can cluster up to eight RS/6000 systems or nodes in one location. The technology was developed by Clam but is sold by IBM. GeoHA also can cluster up to eight RS/6000 nodes but does so by replicating, or mirroring, data to nodes located at remote backup sites. RS/6000s on both ends of the network link can access the same "virtual disk" volume of shared data, which may be written on several disk drives.

Unix clustering

Speed contingent on apps

Network speed for GeoHA will depend on application type, said John Ranta, marketing vice president at Clam.

"The more transactions you are running, the faster the pipe you will need," he said. A T1 leased line may be sufficient, he said, but some users may prefer faster T3 or Asynchronous Transfer Mode links to boost data mirroring to backup servers.

One HACMP user wants to see switchovers to backup servers that don't require end users to log in to the backup server.

"We want to see an automatic switch from one to the other, where the users would not be disrupted," said Jerry Skalaski, staff director of disaster recovery at Nynex Corp. in New York. The company has two RS/6000 sites about 250 miles apart for disaster recovery purposes. Clam said there is a way to do this if the system has HACMP clusters at both ends.

Too rich for their blood

The $150,000 GeoHA package, which includes consulting, may be an expensive means of data mirroring for some users. But Bill Bradway, a technology analyst at The Tower Group in Wellesley, Mass., said it would appeal to bank users and financial traders. Those users depend on timely market data updates, and the clustering package could prevent downtime during trading hours, he said.

Brian Richardson, an analyst at Meta Group, Inc. in Stamford, Conn., said the GeoHA software will have to be ported to more platforms to become more widely adopted. It runs only under IBM's AIX operating system now. GeoHA also needs to provide asynchronous updates, he said, because its technology waits for both servers to agree on a data update before proceeding to the next transaction.

Clam spokesmen last week said the firm will port GeoHA to other Unix platforms next year and is considering Sun Microsystems, Inc. and Hewlett-Packard Co. Unix servers. Asynchronous updates also will be supported starting next year, they said.

GeoHA clustering software: How it works

GeoMessage module — Supervises all cluster nodes, monitors their work.
GeoMirror module — Posts data updates to secondary servers, keeps remote and local clusters synchronized
GeoMessage module — Maintains "heartbeat" link between server/nodes that signals outages

Alliances top Imaging Expo

The recent Imaging Expo show in New York generated several product announcements and vendor agreements, which are becoming more common as users look to their vendors to supply more than just one piece of the imaging puzzle.

IMAGING

- **The COLD Consortium**, a group of Computer Output to Laser Disk (COLD) software makers, plans to develop a common COLD interface. The interface, which will be based on Watermark Software, Inc.'s client software, will let users manage and launch images, electronic documents and archived COLD files. Members include Computron Software, Inc., Icon Consulting Group, Inc. and Greenbar Software.
- **Meta Software Corp.** in Cambridge, Mass., has developed an interface between its Workflow Analyzer modeling software and FileNet Corp.'s Visual WorkFlo management software. Business models created in WorkFlow Analyzer can automatically generate workflow applications in Visual WorkFlo.
- **FileNet** in Costa Mesa, Calif., unveiled ValueNet Solution Alliance, a program that makes it easier for FileNet partners to develop packaged software for targeted vertical industry applications.
- **PaperClip Software, Inc.** in Hackensack, N.J., added a workflow module, PaperClip Workflow, to its document management software offerings.
- **Unisys Corp.** in Blue Bell, Pa., has integrated the InfoImage Folder imaging system with Microsoft Corp.'s Exchange client, letting users combine high-volume production imaging systems with smaller, workgroup-oriented systems.
- **Minolta Corp.**'s Business Products Group in Ramsey, N.J., announced a high-end version of its client/server imaging system. MIMS 3000 Plus upgrades system capability from departmental imaging applications to high-volume applications with expanded optical storage management. It also integrates workflow software from Actinn Technologies, Inc.
- **Diamond Head Software, Inc.** in Richardson, Texas, announced ImageBasic Electronic File Cabinet, software that lets users index and store image data using the leading SQL databases. Users can customize and compile an underlying set of Microsoft Visual Basic source code, which ships with the software, to create a plug-and-play imaging application.
- **ZyLab International, Inc.**, a Gaithersburg, Md., maker of imaging and full-text retrieval software, will use image capture software from Kofax Image Products as its front end (see item, page 65). Kofax is based in Irvine, Calif.
- **Fujitsu Computer Products of America, Inc.** in San Jose, Calif., added two high-volume scanners to its ScanRight Image Kit software. Bell & Howell Co. in Chicago added a flatbed scanner to its line of mostly sheet-fed scanners.
- **Wang Laboratories, Inc.** in Billerica, Mass., began shipping versions of its Open/image and Open/workflow software for Microsoft's Windows NT.

— Tim Ouellette

Briefs

Keyfile integrates workflow software

Keyfile Corp. in Nashua, N.H., plans to integrate its workflow software with Microsoft Corp.'s Exchange Server under one interface. Users will be able to augment the low-end workflow routing features that come with Exchange with advanced features such as mapping the graphical work process, monitoring the process and changing an active process.

Departmental hub debuts

Accton Technology Corp. in San Jose, Calif., recently announced SwitchHub 8S, an eight-port workgroup Ethernet switch designed to link departmental networks. The switching hub uses an internally developed device called the EN166X MaltiPacket Accelerator to deliver up to 80M bit/sec. of dedicated bandwidth per port in full-duplex mode. It has a maximum forwarding rate of 119,040 packet/sec. and has 64K bit/sec. buffers on each port to handle packet overflows. The system will ship for $2,995.



AN ICEBERG IS VOLUMES BIGGER THAN IT LOOKS.

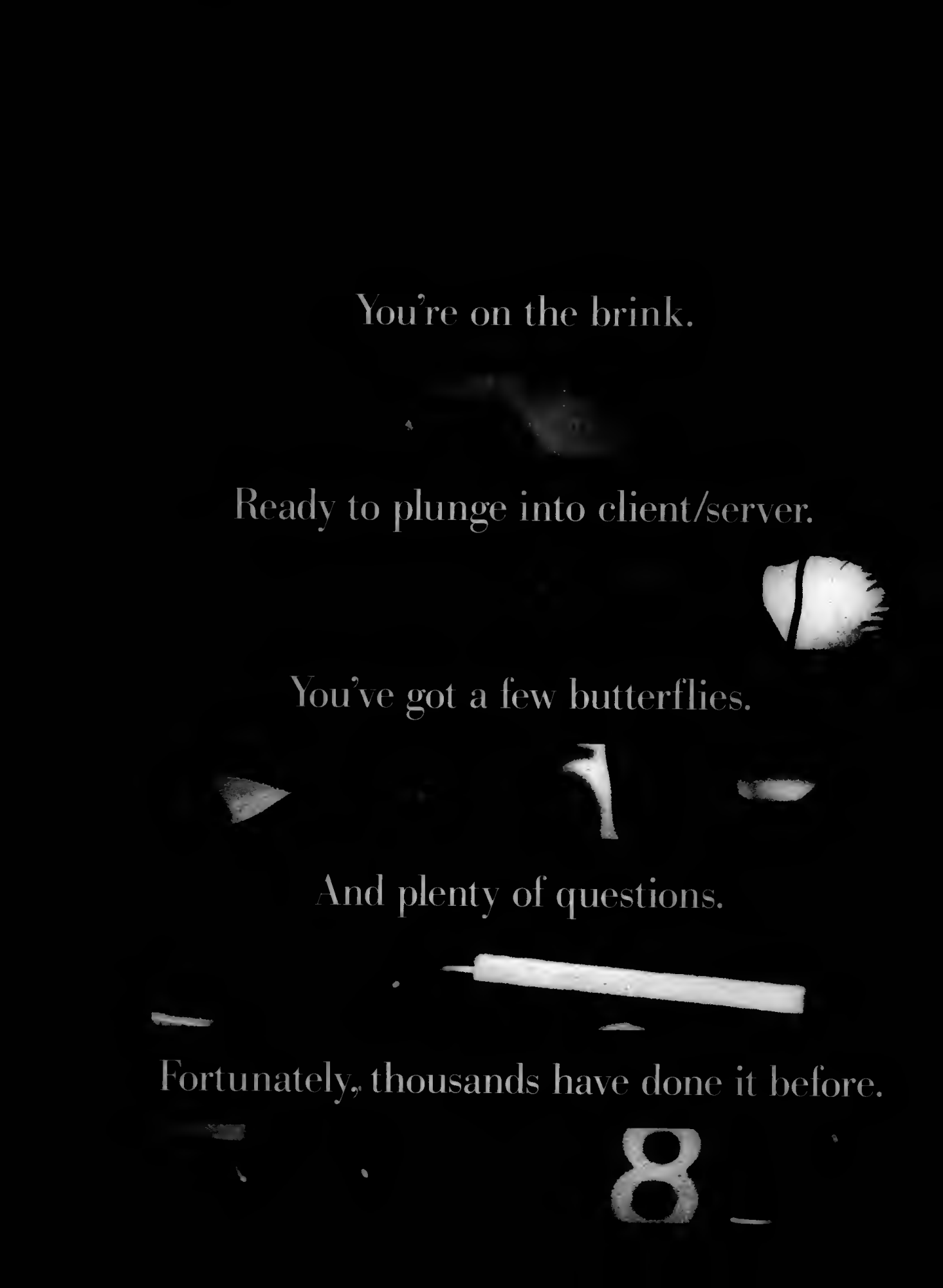
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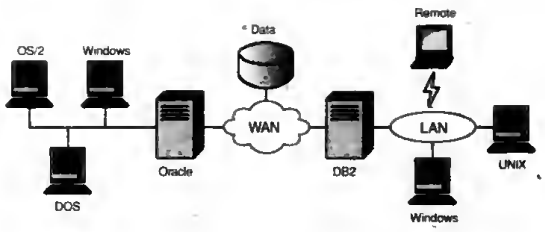
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Even better, we're prepared to dive in with you, putting knowledge into action. IBM is committed to a variety of open standards, so we can help maximize your current investments and integrate the new technology you need. Whether it's made by IBM or anyone else. The goal is to design a system that can change and adapt as quickly as your business.

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Specom Technologies Corp. has introduced VisionTime Pro, a videoconferencing product.

According to the Santa Clara, Calif., company, VisionTime Pro is a Windows-based whiteboard application that lets two users exchange video, graphics and text data. Video graphics data can be captured or loaded from a disk and placed on the sending whiteboard and then viewed on the receiving whiteboard.

VisionTime Pro requires a PC equipped with a modem to support document conferencing over regular telephone lines, digital phone lines, networks and the Internet.

Pricing for VisionTime Pro starts at $49.

▶ *Specom Technologies*
(408) 982-1880

Diamond Head Software, Inc. has introduced ImageBasic Electronic File Cabinet, a product for imaging development environments.

According to the Honolulu company, ImageBasic Electronic File Cabinet allows users to capture, index and store image data using most leading SQL databases, including those from Microsoft Corp., Oracle Corp. and Sybase, Inc. It was designed to offer users with lesser programming skills a basic application and a higher level from which to begin deployment of a customizable imaging system.

ImageBasic Electronic File Cabinet acts as a large database that tracks the location of stored image data in a central image storage facility. It will be offered as a separate module for ImageBasic, Diamond Head's component-based development environment.

Pricing for ImageBasic Electronic File Cabinet starts at $1,000.

▶ *Diamond Head Software*
(808) 545-2377

Central House Technologies, Inc. has announced Internet Exchange 1.1, a gateway for Lotus Development Corp. CC:Mail users.

According to the Plymouth, Calif., company, Internet Exchange lets Macintosh and PC CC:Mail users exchange files across platforms transparently. It provides connectivity so that audio, images and text can be transferred among internal CC:Mail networks and external users on the Internet.

Internet Exchange 1.1 receives mail from and routes it onto the Internet using information obtained from either host tables or the Domain Name System. It is a full Internet Mail router and eliminates the need for any additional Unix system to handle mail routing on behalf of CC:Mail users.

The product also stores information about destination or peer-based capabilities. Internet Exchange consults the peer database prior to sending messages. By doing so, it obtains permission to send messages to the destination and then determines the appropriate attachment types and encoding methods that can be successfully received by the remote system.

Pricing for Internet Exchange 1.1 starts at $3,395.

▶ *Central House Technologies*
(209) 245-5900

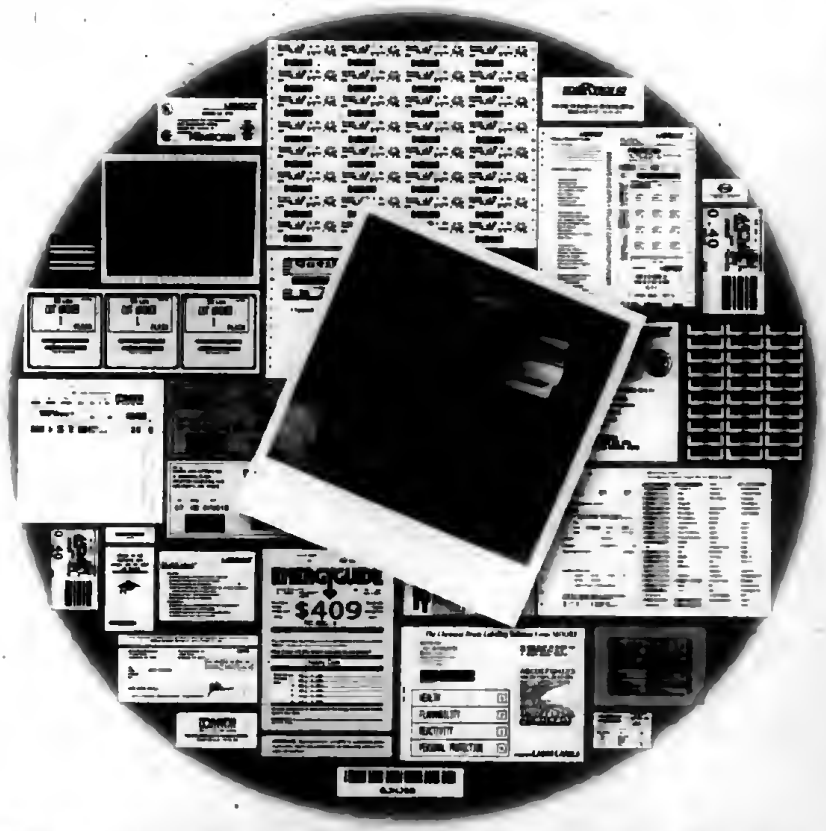
Kofax Image Products has announced Ascent Capture 1.1, an integrated software application for high-volume scanning and indexing of business documents.

According to the Irvine, Calif., company, Ascent Capture 1.1 is the capture application component of a component imaging system. It is server- and database-independent and is compatible with most network platforms, including Microsoft Corp.'s Windows NT Server, Novell, Inc.'s NetWare and Unix.

Ascent Capture 1.1 can process more than 50,000 pages a day. It supports LaserData, Inc.'s OS/N optical jukebox manager and has features that allow the automated processing of fax images. It includes multilanguage optical character recognition support.

Pricing for Ascent Capture 1.1 starts at $7,995.

▶ *Kofax Image Products*
(714) 727-1733



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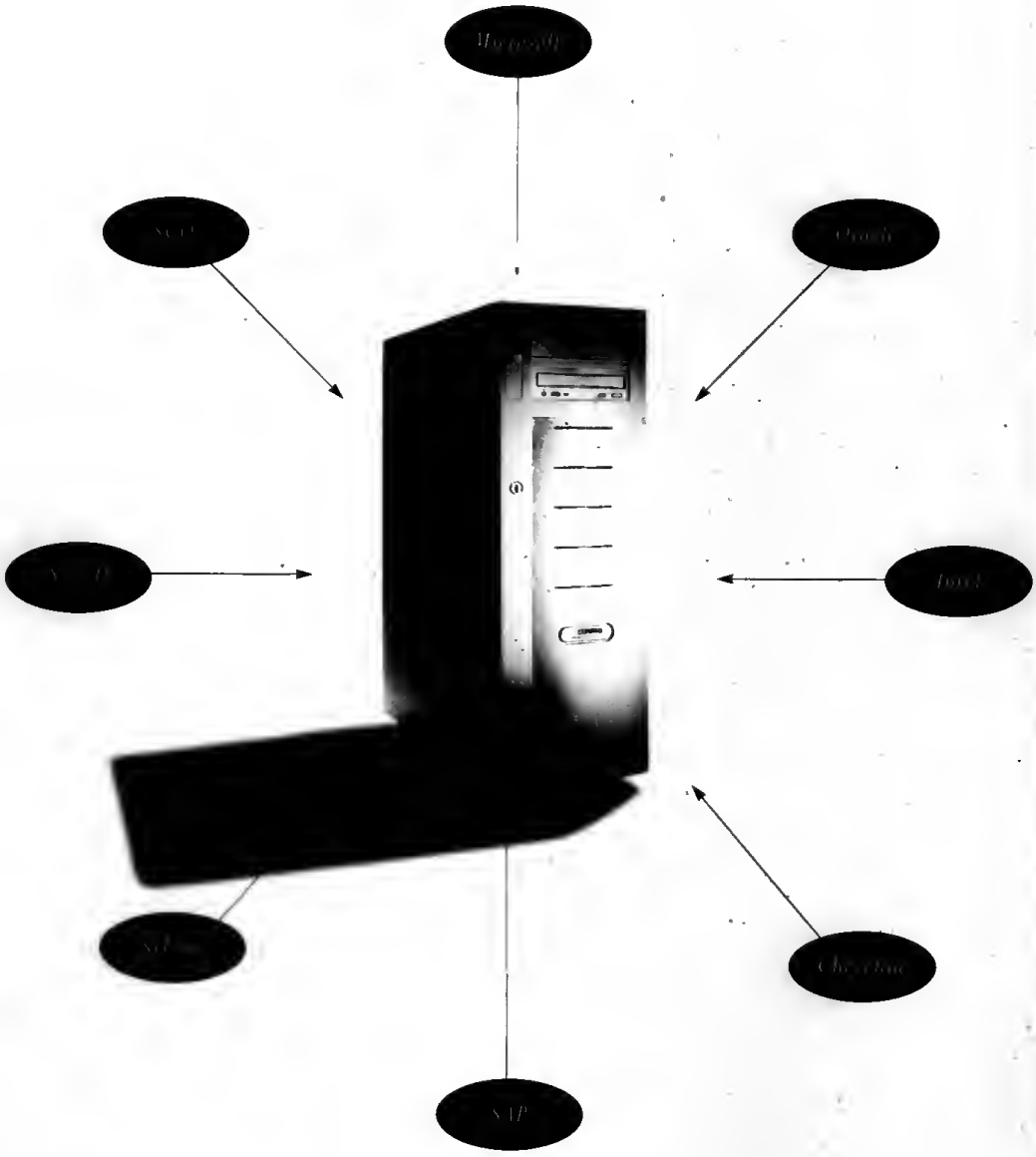
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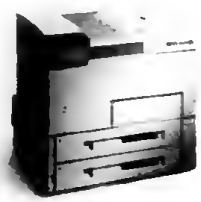
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New terminal more than 'dumb'

By Steve Moore

In a move seemingly against the grain of PC-based client/server computing, NCD Systems Corp. in Mountain View, Calif., recently unveiled a diskless "black box" that lets users share server-based Windows and Unix applications.

The vendor's Explora desktop system obviates the need for a desktop PC. Packaged with a display terminal, keyboard and mouse, the product targets users fed up with the cost and hassle of constantly changing PC hardware and software. Explora accesses server-based applications, but it does its own RISC processing of graphics for display on a standard X Window System terminal.

Users hailed the product and said it doesn't represent a return to the old centralized computing model.

"It's not a dumb client; it's a somewhere-in-between client," said Randy Spaulding, engineering project leader at Marquette Electronics, Inc. in Milwaukee, a major developer of patient monitoring systems for hospitals.

Marquette's Multiparameter Analysis and Review System (MARS), which is based on a Sun Microsystems, Inc. SPARCstation with Explora clients, is used in intensive care units, operating rooms and clinics. MARS monitors "the whole heart/lung system," including heart signals, blood pressure and pulmonary functions, Spaulding said.

For Marquette's customers, "this is the ultimate solution — one [Explora-based] terminal to access all the different pieces of information they need" across disparate medical systems "without having to relog in each time," he said.

Explora will also be of interest to security-conscious information systems shops because "users can't do anything like changing the environment or adding applications without IS support," said Rob Enderle, an analyst at Dataquest, Inc. in San Jose, Calif.

"If medical equipment goes down at 2 a.m. in an intensive care unit, we can log in to a central server on the dime and get it back up because everything is there on the server instead of spread across the network," Spaulding explained.

Low cost, administrative control and ease of maintenance are Explora's strong points, he added. Spaulding also noted, "Performance is very good when you don't know the difference between running on this $3,000 terminal [system] or running right on a $15,000 server."

One potential drawback of Explora, Enderle said, is that "it is a RISC box without any [formal] advocacy from operating system providers." Without such support, NCD's technology may not work optimally with future operating systems, he said.

Vehicle

CONTINUED FROM PAGE 59

installation and cut down on the estimated five-year return on investment, McBride said. This type of return on investment is normal for a high-level imaging system.

The division was able to add digitized driver's license photos into the imaging system without much extra integration. "That would have cost us about $1½ million itself as a separate storage system, but it only cost a little over $100,000 to put [them] into the FileNet system," McBride said.

New driver's license applications, about 4,000 each day, are now being scanned and indexed, then routed for review based on a set of predefined workflow rules. And just last week, the Dealer Licensing Bureau placed all bonding, insurance and registration forms on-line.

More recently, a pilot project has one law court electronically sending minor violation notices to the Driver Control Bureau.

Because cost-cutting is a big issue in state and local governments, McBride wanted to make sure department employees kept abreast of upcoming changes and were assured that they wouldn't lose their jobs. Employees whose only job was to file and refile paper documents were transferred to other departments, and system users were given personalized hands-on training by FileNet.

"Our transition was pretty smooth," Carter said. "It did create some problems because we had to convert about a million paper documents that were in our files. So for six months we were working in our files as we converting."

And jobs at the Division of Vehicles could change a little more down the road. Interactive, publicly accessible kiosks are being considered to quickly process automobile titles and registrations and driver's licenses, McBride said.

DCE

CONTINUED FROM PAGE 59

at Hurwitz Consulting Group, Inc. in Newton, Mass., many large sites want DCE's ability to render distributed networks as secure as central mainframes.

Sun users can buy the Transarc products from Transarc or Sun, which resells the Transarc wares. Sun doesn't directly support DCE in its own products.

"A lot of people do use DCE on Sun platforms, especially on Wall Street," said Liz Melcher, an analyst at Gartner Group, Inc. in Stamford, Conn. "But I don't think you're going to see Sun change their strategy towards DCE because they don't see the volume market there yet." Sun sells its ONC/NIS+ networking software and Network File System (NFS) management software for distributed computing, she said.

But the Transarc package supports NFS links to DCE's Distributed File System, analysts said. And Sun said last week that it supports X/Open Co.'s XFN, a federated-naming standard to link all major file systems.

Let the sun shine in

Top features of Transarc's DCE 1.1 for Solaris include the following:

- **DFS 1.1 for Solaris, a new version of DCE's Distributed File Service, now connects with Sun's Network File System.**
- **Improved security for distributed DCE servers and clients.**
- **New Control Program manages all core DCE functions with a single software tool set.**
- **New utility links Windows NT remote procedure calls with DCE's naming services.**
- **General Service Security API lets users write applications that leverage DCE's unified security.**

Briefs

Halloween treat

Novell, Inc. introduced a System 6 release of its Tuxedo transaction monitor and middleware on Halloween in Boston. System 6, which was previewed last spring, adds a graphical user interface based on the Open Software Foundation's Motif. The product will ship this quarter on Unix platforms and early next year on NetWare and Microsoft Corp. Windows NT systems.

TRW calls on C-Phone

TRW, Inc., as prime contractor, will install Target Technologies, Inc.'s C-Phone desktop videoconferencing systems as part of an $11½ million contract with the U.S. Department of Defense. C-Phone, based on T.120 and H.320 standards, lets PCs on a LAN act as if they were telephones on a video private branch exchange

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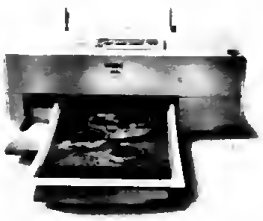
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FIRM PACKAGES SOFTWARE/SERVICE FOR ON-LINE PLAYERS, 76

Enterprise Networking

INTERNETWORKING • SERVICES • NET MANAGEMENT

Network administrators outsource to get relief

By Patrick Dryden

The high cost and complexity of managing client/server networks has some users viewing outsourcing as a relief, not a threat.

They aren't talking about traditional outsourcing where integrators such as Electronic Data Systems Corp. or vendors such as Digital Equipment Corp., Hewlett-Packard Co. and IBM sell companywide, employee-cutting, high-revenue services.

Rather, users want to outsource specific, cost-effective tasks to small networking specialists. The goal is to assist, not replace, harried support staff.

"The productization of network management services is starting now," said Vid Sribar, vice president and service director of Global Network Services at Meta Group, Inc., a consultancy in Westport, Conn.

Shopping around

This new class of outsourcing tool allows comparison shopping, Sribar said, so administrators can select a specific service, such as wide-area network or electronic-mail management, at the best price.

"Instead of worrying about losing their jobs, managers can have third parties do the work," Sribar said. "This selectivity will change the whole outsourcing marketplace: The industry will get away from being all things to all people."

User interest is demonstrated by companies such as NetSolve, Inc. in Austin, Texas, which recently doubled its number of customers for ProWatch, a WAN management service.

Management services

The market is drawing service offerings from companies such as New England Systems (NES) in Waltham, Mass. NES last month defined a set of management services called InfraMax that takes over full-time remote management responsibility at a base price of $250 per month per managed object.

Services rendered

Meta Group forecasts that management services will become a commodity within two years. The services will have widely accepted definitions and prices, like traditional commodity products do.

Talk about selective, or transformational, outsourcing began about a year ago. It is losing its stigma as information systems managers "find they can save time and money and resources on management services offered by small companies," said Kitty Weldon, an analyst at The Yankee Group, a Boston consulting firm.

Remote management services are becoming more popu-

Outsourcing, *page 82*

Users wary of 'kitchen sink' switching hubs

Vendors say routing, remote access are among many benefits

By Bob Wallace

Vendors are marketing systems once narrowly pitched as switching systems as all-in-one switching hubs that will soon be able to do everything, including routing and remote access.

For example, switching hub superpower Cabletron Systems, Inc. will soon announce two modules that incorporate router software from market leader Cisco Systems, Inc. (see chart). Several other features are also available via add-on modules.

Taking it slow

Analysts stress that the migration from stand-alone products to do-it-all boxes will be gradual.

"Switching hubs [are trying] to become the ultimate connectivity device in the enterprise network," said Skip MacAskill, a senior research analyst at Gartner Group, Inc. in Stamford, Conn.

Vendors need to show users the benefits — if and when they exist — of supporting multiple technologies in one box, he added.

One user agreed that caution was in order before rushing out to buy all-in-one switching hubs.

"There is a temptation to go with a magical mystery box to do everything," said John Scoggin, supervisor of network operations at Delmarva Power & Light Co. in Newark, Del.

Users said they use two key criteria for deciding when to integrate technologies into switching hubs: Will the integration save money, and will it add more value than if it were dedicated to switching?

Switching hubs

Vendors continue to add features to hubs. For instance, when routing capabilities are added, users no longer have to buy stand-alone routers or can use them as wide-area network access devices. In addition to routing, the following technologies are available:

- Remote access: Hub vendors are integrating remote access functionality so remote users can access a central site's LANs through switching systems.

Cabletron has built remote access functionality from market pioneer Xylogics, Inc. into its switching hubs. And with its recent purchase of Xylogics, Bay Networks, Inc. is expected to follow suit.

- LAN-to-host links: Mike Skubisz, director of product marketing at Cabletron, said the company considers its hub that is equipped with channel attach modules as a middleman of sorts between LAN users and IBM mainframes.
- Token Ring switching: MacAskill said he expects Token Ring switching to grab the attention of a broad user base as firms run out of capacity on their shared-capacity 4M and/or 16M bit/sec. Token Ring LANs and seek dedicated bandwidth as the solution.

3Com Corp. and Cabletron already offer Token Ring switching modules for their switching hubs. Bay Networks is expected to follow suit because it ac-

Switching hubs, *page 82*

Router roundup

Cabletron's new router modules

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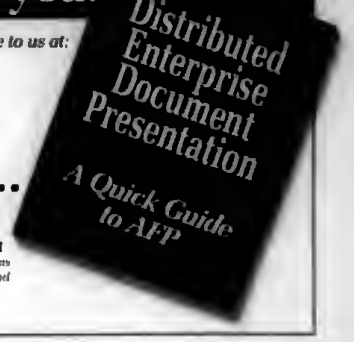
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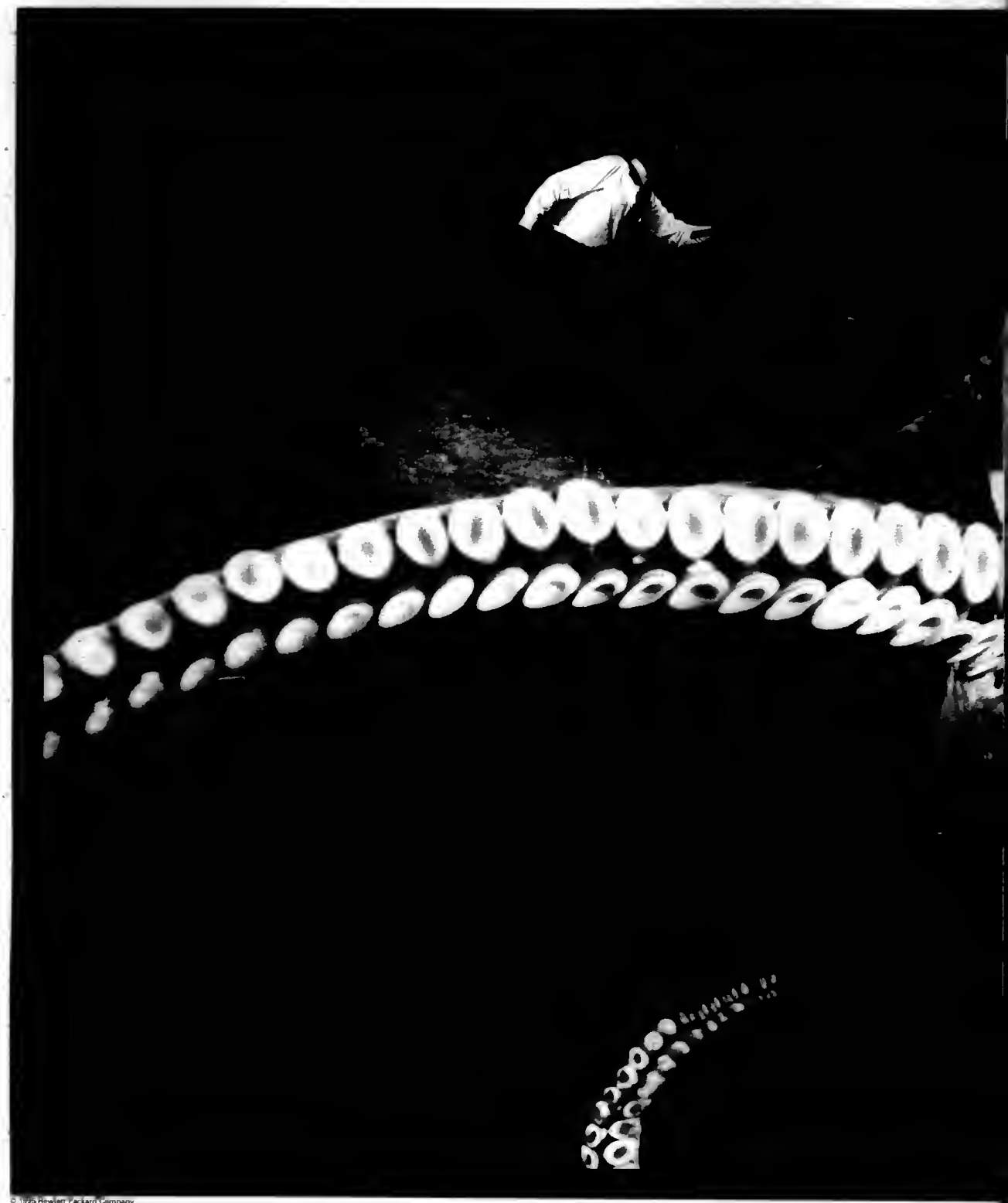
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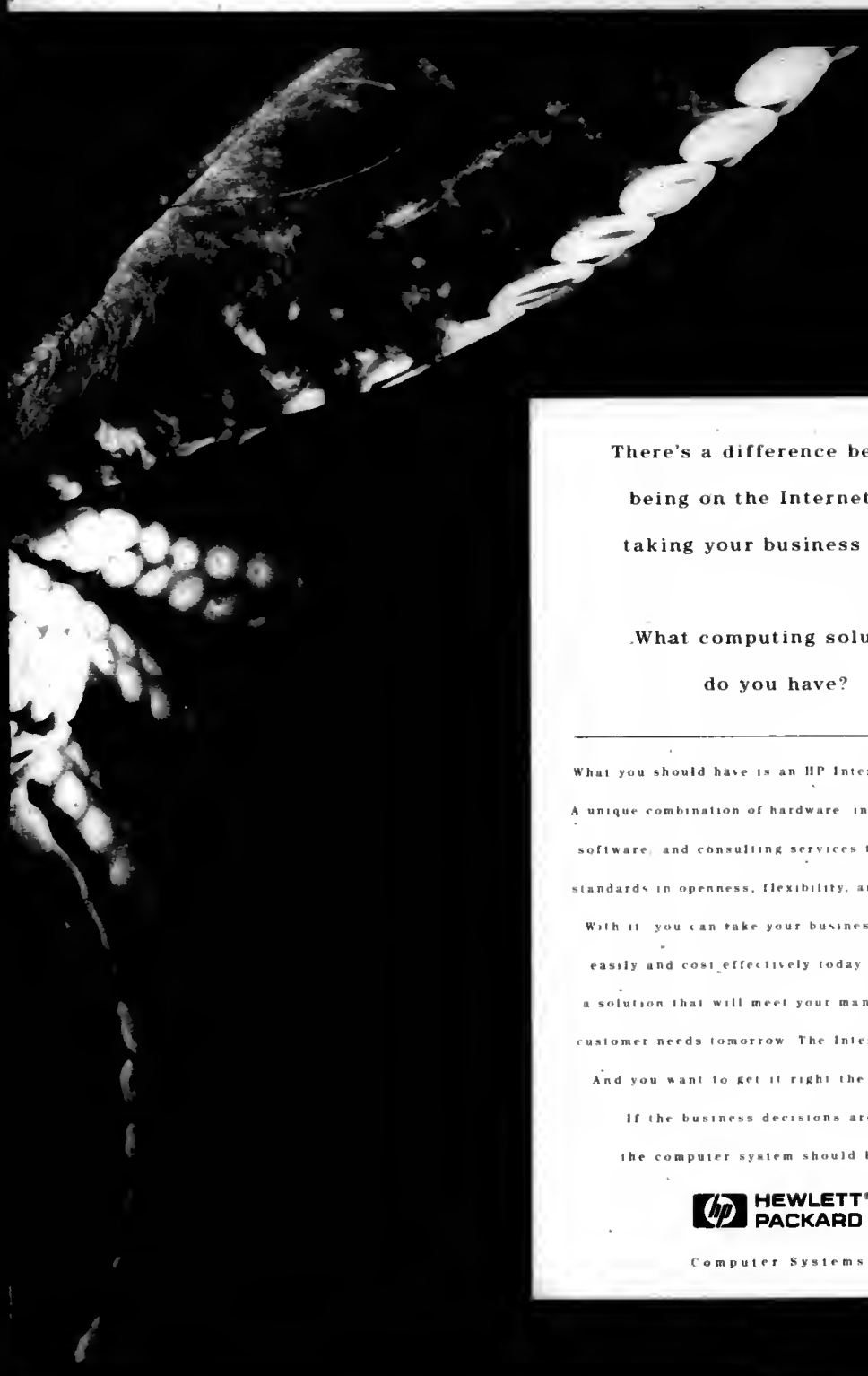
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THE INTERNET PAGE

Firm packages software, services for on-line players

Open Market hopes to ease security concerns of customers

By Kim S. Nash

Taking a slightly different tack on electronic commerce than other Internet vendors that sell software-only products, Open Market, Inc. recently introduced a bundled software/service program for companies looking to do on-line business.

Companies such as Netscape Communications Corp. in Mountain View, Calif., and Process Software Corp. in Framingham, Mass., already offer World Wide Web servers designed to run the applications of electronic entrepreneurs. But Open Market's Merchant Solution requires users to buy both software and outsourcing services.

That arrangement can yield tighter security, users said.

Here's how it works: Acme Doohicky Co. could buy Open Market's WebServer product to handle tasks such as displaying product brochures or catalogs and logging order information from Web-surfing customers.

Acme would then need to contract with Open Market for the service portion of Merchant Solution. Servicing involves processing incoming orders through systems set up at Open Market headquarters in Cambridge, Mass. (see chart).

Burden eliminated

In theory, this type of rental arrangement would relieve a small company that is launching on-line commerce of some of the burden of providing complex security to its customers, said Ben Narasin, president of Internet Design Group, a New York company that runs an Internet fashion mall.

Internet Design Group doesn't use Open Market products, but it does rent Web server space from a local third-party provider. Narasin said he decided to rent because of security and reliability concerns. "If you want to be a player in electronic commerce, you need high security, redundancy, support, access and bandwidth," he said. "That's tough to get on your own unless you're prepared to dump serious cash on it."

Merchant Solution was born of work done with early customers such as Banc One Corp. in Columbus, Ohio. Banc One is one of the 10 largest U.S. banks.

Banc One and Open Market plan to work together to create an electronic payment system and other on-line financial applications, according to Open Market officials.

Initial target customers are primarily software vendors and companies that traffic information, said Cliff Ustein, a product manager at Open Market. For example, Lexis-Nexis, Inc. is using Open Market products to set up an information sales outlet on the Internet.

Companies that sell hard goods — sweaters, tires, golf clubs and so on — have been slower to take up electronic commerce, Ustein said.

"That kind of product is not as easy to move as data," he said.

Open Market's Merchant Solution

To sell over the Internet using a software package that starts at $50,000, Merchant Solution charges the following for these service pieces:

Price	Price
■ Access to secure transaction processing done at Open Market's headquarters in Cambridge, Mass.	■ $5,000 for a one-year contract
■ One-time registration fee for the service	■ $5,000
■ Transactions put through the service	■ 50 cents each for transactions worth less than $20, $1 each for transactions worth more than $20

Briefs

The Great Net of China

Despite the sore lack of an efficient telecommunications infrastructure, the People's Republic of China is about to get wired. Systems vendor Control Data Systems, Inc. and network services provider Rayes Technology Co. plan to create China On-line, a country-wide network to connect corporate and government groups with one another and the rest of the world via electronic mail. Twelve Control Data Mail-Hub E-mail servers are expected to be installed in China's 12 largest cities by the end of next year. Another 288 servers are due before 1999, a Control Data spokesman said.

Catholic Church gets Web page

The Roman Catholic Church has established a home page on the World Wide Web called the Catholic Information Center on Internet. The Web page, accessible at http://www.catholic.net, offers a range of information about the Catholic faith, the church's teachings and the moral issues confronting the world.

Learning Java

Sun Microsystems, Inc.'s Sun Service division is offering classes for Java, Sun's multimedia programming language for the Internet. Classes are available for basic or advanced programming. The course consists of a three-day class for basic programming or a two-day advanced class. For further information, in the U.S., call Sun Educational Services at (800) 422-8020.

Vendors see Web possibilities for software offerings

Why the Web?

The Internet is becoming a popular platform for software products. Here are some examples:

Company	Product	Feature
Collabra	Collabra Share 2.1	Users can embed live Web links in Share documents
Lotus	Notes 4.0	Notes documents have live links to the Web
JetForm	JetForm Filler 4.1	Improves the way Web forms collect information and send the data to related applications
AimTech	IconAuthor 7.0	Accesses multimedia training material over the Internet

By Tim Ouellette

Several vendors have recently weaved World Wide Web integration features into their software to take advantage of growing corporate use of the Web.

For example, developers using Aimtech Corp.'s IconAuthor to design multimedia computer-based training (CBT) applications can now turn to the Web as a place to store some of the multimedia content. Web support was a goal of the Nashua, N.H., firm's multimedia development agreement with IBM [CW, July 24].

CBT access to the Web is important, with many companies developing Web sites for internal use only. Storing training program contents on the Web means quicker access and updates than if a company issued CD-ROMs to its remote offices or developed a network infrastructure.

OnLine Guerrilla Marketing estimates that commercial Web usage is growing 70% a year

Forms galore

With analysts estimating that almost half of all Web pages use forms to gather information, JetForm Corp. in Ottawa sees a market for its electronic forms software. The current HyperText Markup Language forms on the Web are limited because they have no way to control the display or filing of the form, said Joanne Correia, director of Internet products at JetForm.

JetForm's planned Web browser helper application will let a form change as the user enters information, depending on how the user answers certain questions. A separate server module will process the data in the form and then initiate a workflow process within an organization.

Following fast on the heels of its purchase by Netscape Communications Corp., Collabra Software, Inc. in Menlo Park, Calif., has added a live Web link feature to its Collabra Share 2.1 groupware. Users double-clicking on the embedded link within a Share document will launch Netscape's Navigator browser software, which will display the required Web document.

Lotus Development Corp. will include a similar feature in Notes 4.0, which is due by the end of the year.

"Companies are seeing some Web demand out there right now by some of their influential accounts," said Gerry Murray, an analyst at International Data Corp. in Framingham, Mass. "It makes a lot of sense to build the product now when big customers are ready and waiting to buy it."



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Management tools scaling to fit distributed networks

By Patrick Dryden
DALLAS

Management platform vendors are looking to respond to user needs by making monitoring software more scalable, judging from the recent Enterprise Management Summit '95 held here.

Several announcements here promised platforms that will connect better so support staff can spread management functions further throughout growing networks.

Enterprise Management Summit '95

Administrators need more distributed management capabilities in the extended networks that client/server environments create. With added capabilities, they can create domains of control throughout the network rather than a central control point, said Charlie Robbins, an analyst at Aberdeen Group, Inc. in Boston.

"The tools evolved to conquer certain tasks, but they can't all talk to each other," Robbins said. "There's no management nirvana yet."

Vendors such as Cabletron Systems, Inc., Hewlett-Packard Co. and SunSoft, Inc. are improving communications for their management servers, which provide a framework that supports add-on tools. With these tools, administrators can watch events across large networks and link events to functions such as system and application control and trouble-ticketing.

But one newcomer to the U.S. market claims to already provide a complete, scalable set of management applications.

Bull HN Information Systems, Inc. brought its Integrated System Management suite of 43 network and systems management applications here under the name OpenMaster. Separate object-oriented tools combine to manage data and telecommunications networks, systems, databases, PCs and security.

Size isn't a limitation for OpenMaster, according to Bill Wood, general manager of Bull's North American operations in Billerica, Mass. OpenMaster manages parent Groupe Bull's global network of 35,000 users down to the desktop. And the French national health insurance administration handles 30,000 users through 150 OpenMaster servers.

Bull hopes the breadth of its offerings will help it crack the U.S. market. OpenMaster is scheduled to ship in the U.S. in January. Pricing will start at $10,000 for the basic management framework with monitor and alarm applications.

Step ahead

Also at the show, SunSoft, a network management pioneer, took another step toward delivering Solstice Enterprise Manager, its high-end management platform.

SunSoft released to OEM partners Solstice Enterprise Manager 1.1.1, a production-ready form of the object-oriented platform that can handle distributed networks with more than 10,000 nodes. Version 1.1.1 adds an embedded mapping system. It gives console operators a geographical reference while navigating networks and overlay information such as telephone-line layouts.

Beta tester Keith Finnie, manager of network management systems at British Columbia Systems Corp., hopes this release fixes bugs. He needs the event-correlation engine in Solstice Enterprise Manager to filter the thousands of alarms reported daily to the network command center for the Victoria-based utility.

Version 2.0 of Solstice Enterprise Manager, the general release for users, won't appear until the middle of next year.

Meanwhile, HP shipped the first installment of Tornado, its project to distribute the OpenView management platform.

Version 4.0 of Netwnck Node Manager provides a client/server design so more staff can access the server across a network and interface improvements for faster, easier operation. HP officials said the rest of next-generation OpenView won't be available until the middle of next year.

Managers of large Novell, Inc. NetWare environments will get relief sooner.

Novell shipped Version 2.0 of ManageWise, a console that integrates network, server and desktop management functions. Now, managers can track trends on server and network parameters; streamline problem-solving through integration with the console for NetWare Directory Services; link to enterprise management consoles via a Simple Network Management Protocol agent; and control LANs remotely through secure scalability features.

Managers also can launch NetWare Navigator from the ManageWise console to distribute software.

HP, SunSoft: 'Git along without us'

A few gunslingers backed out of this year's Enterprise Management Summit Shoot-Out.

HP and SunSoft declined to participate in the Shoot-Out, a juried competition in which vendors try to make their enterprise management platforms solve real-world problems. These include asset discovery, fault management, software distribution and configuration, and even proactive management, or finding likely trouble first.

The no-shows ranked the attendees who rely on those platforms. HP and SunSoft said they chose to apply their resources to other venues.

"That doesn't show commitment to users and application developers," said Barbara Potkay, a systems architect at Connecticut Mutual Life Insurance Co. in Hartford, Conn.

She wanted to see HP's OpenView perform against other products.

Shoot-Out contestants included Bull HN Information Systems, Cabletron Systems, Digital Equipment Corp. and IBM.

IBM was named the best at handling four of six scenarios with SystemView for AIX.

IBM was the overall winner. Cabletron's Spectrum won in one category and placed second in three.

—Patrick Dryden

Frame relay lets coupon publisher clip 'n save time, money

By Neal Weinberg

It didn't take a genius to figure out that Jonathan Beyman's business problem involved time and space.

The moon made a complete revolution around the earth in less time than it took for the preproduction process of his company's coupon books.

Beyman, senior vice president of CUC International, Inc. in Stamford, Conn., had a salesforce of 650 people deployed in more than 100 U.S. cities from Akron, Ohio, to Wichita, Kan.

Salespeople take orders from restaurants and other businesses that want to be included in the thick coupon books produced by CUC subsidiary Entertainment Publications, Inc. The books are then given to charities that use them for fund-raising. The charities split the proceeds with CUC.

Entertainment Publications, Inc.
Stamford, Conn.

Problem: Preproduction time averaged 24 days because original and corrected versions of copy and art were sent back and forth by overnight mail from more than 100 offices to headquarters in Troy, Mich.

Solution: The information is now transmitted via frame-relay network at speeds of 56K bit/sec., reducing preproduction time to six days.

But Beyman was using overnight mail to ship orders and advertising copy and logos to his central processing facility in Troy, Mich. An ad was designed, then shipped back to the sales representative, who showed it to the restaurant owner. Changes and corrections inevitably occurred, so each ad averaged four transmissions back and forth before the transaction was complete. The average preproduction lag time of 24 business days was deemed unacceptable.

To address the problem, Beyman built an application that would automate the creation of coupons. He consulted with long-distance carriers to see what they had that would provide fast, cost-effective transmission of data and images.

Since the salespeople tended to return to the office late in the afternoon with their orders, Beyman needed a system that could handle bursts of high-volume traffic for short periods of time and a system that would charge him only for the bandwidth used.

"Frame relay won out from the cost and performance standpoint," Beyman said. Rather than get involved in the nuts and bolts himself, he signed a contract with MCI Communications Corp. whereby MCI would install, maintain, manage and service the system.

Handled rough times

Installation of the frame-relay network began last year. There was some "initial rockiness," Beyman said. There was some lack of communication about when frame-relay installations would occur and the procedures for getting onto the network. But after the "growing and start-up pains," the system has recorded better than 99% availability and has "more than paid for itself," Beyman said.

About 60 offices were put on the network last year, and the rest were hooked up this year, he said. Now, salespeople come back to the office with their orders and an administrative assistant sends advertising data and images to the central office over a 56K bit/sec. frame-relay connection. A version of the ad that the sales staff can show the customer is ready the next day, Beyman said.

The 24-business day cycle has been slashed to six days. "All of a sudden, we took a gigantic leap forward," he said.

Automating the process allowed Beyman to reduce his staff of graphic artists and has saved "a tremendous amount" of money in overnight mail costs.

Frame relay, he said, is "a good technology when you have lots of district offices and a real need to be on-line."



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Radcom, Inc. has unveiled Dual-Port Network Simulator, a software product for Asynchronous Transfer Mode (ATM) signaling simulation.

According to the Mahwah, N.J., company, Dual-Port Network Simulator lets ATM developers simultaneously perform network simulation or user simulation on two physical ports, allowing them to generate calls and pass data between the two ports. It runs on Radcom's ATM analyzer.

In the network mode, the software acts as a switch simulator by supporting two users who can switch signaling messages and data between them. In the user mode, it simulates users on two ports for routing complete connections through the switch being tested.

Dual-Port Network Simulator costs $10,000.

▶ *Radcom*
(201) 529-1100

Integralis Ltd. has introduced Mime Sweeper, Internet mail security software.

According to the Los Altos, Calif., company, Mime Sweeper automatically unscrambles incoming electronic mail and initiates a security check, alerting network managers of any viruses.

Mime Sweeper incorporates store-and-forward technology that diverts incoming files to a mailbox where they can be scanned for unidentifiable attachments or viruses. Messages containing undesirable attributes are quarantined, allowing the use of virus protection tools.

Mime Sweeper is based on Microsoft Corp.'s Windows NT platform and appears as a transparent post office. It costs $5,000.

▶ *Integralis*
(415) 949-3340

Fortres Grand Corp. has introduced Fortres 101, a network security product.

According to the Plymouth, Ind., company, Fortres 101 protects any standalone or networked Windows or DOS system from unauthorized use. It resides invisibly between users and PCs and gives administrators strict authority over which applications can be run and which systems settings can be modified.

Fortres 101 was designed to ensure that PCs in unsupervised multiuser environments have the same setup each time the computer boots up. It has a single screen that controls all functions of the security system. It works on all major networks.

Pricing for a Fortres 101 site license starts at $295.

▶ *Fortres Grand*
(219) 935-3568

Aware, Inc. has introduced the ADSL Internet Access Transceiver.

According to the Bedford, Mass., company, the product is a high-speed modem that uses asymmetric digital subscriber line (ADSL) technology to deliver data over standard twisted-pair telephone lines without any disruption to normal telephone service.

The product was designed for high-speed data services, including access to the Internet, telecommuting and video-conferencing.

The ADSL Internet Access Transceiver has transmission speeds up to 6.4M bit/sec downstream and 224K bit/sec upstream. The product covers distances up to 12,000 feet.

Pricing for the ADSL Internet Access Transceiver starts at $2,500.

▶ *Aware*
(617) 276-4001

Silknet Software, Inc. has introduced Silknet Support Expert, an on-line customer-support system designed for the World Wide Web.

According to the Manchester, N.H., firm, Silknet Support Expert streamlines and simplifies the creation, maintenance and updating of support databases on the Web.

It lets users enter detailed support inquiries and gives support teams a learning function that helps them find and create new answers for customer inquiries, continually expanding customer-support databases.

Silknet Support Expert includes a Web authoring tool that automatically builds support center replies in Hypertext Markup Language and features automatic document management, intelligent learning functions and synonym search capabilities.

Pricing for Silknet Support Expert starts at $1,995 for the server and one desktop client.

▶ *Silknet Software*
(603) 625-0070

Vantive Corp. has introduced VanWeb, a product for customer information management on the World Wide Web.

According to the Santa Clara, Calif., company, VanWeb gives users universal access to information for sales, marketing, customer support, defect tracking and help desk functions on the Web. It can also publish client/server applications on the Web.

VanWeb lets Web users interact with a Vantive database from any location worldwide. It lets them access, browse and retrieve information from Vantive Enterprise, a suite of client/server applications for customer information management. VanWeb includes a dynamic dictionary that provides form descriptions and an application programming interface that establishes connections between outside applications and Vantive clients and servers.

Pricing for VanWeb starts at $25,000 per server. Additional licensing fees are based on usage.

▶ *Vantive*
(408) 982-5700

Switching hubs

CONTINUED FROM PAGE 73

quired Token Ring switching start-up Centillion Networks, Inc. earlier this year.

• Virtual LANs: Virtual LANs, which are logical rather than physical LANs, are another hot button for switching hub vendors. All of the major players pledge at least basic support for them now; however, greater flexibility is forthcoming.

Vendors have been working hard to address the management issue.

"Sometimes the hardware comes out first, with the network management software delivered later on," said Mike Cookish, 3Com's product manager for LANplex switches. "Our management is finally catching up with our high-performance switching" systems.

Outsourcing

CONTINUED FROM PAGE 73

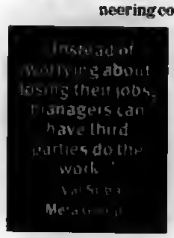
lar as network connections spread to branch offices, according to Weldon.

Outsourcing network management to NES means uninterrupted dinner and sleep for Ed Budelmann, director of Boston Emergency Services Team Crisis Management System.

It provides a psychiatric emergency service computer network for seven hospitals and clinics in the Boston area.

"If something goes wrong, it's not going to be my problem. NES will call in the morning and tell me what they fixed," Budelmann said. "This computer stuff is a tool to help us get our job done — psychiatric emergency services. Why have to worry about network management when I can buy it at a good price?"

Budelmann said he tried to create a staffing pattern within budget for the kind of expertise needed to support the crisis system but couldn't afford it. InfraMax costs one-third to one-fifth the price; plus, he doesn't have to recruit, train and keep skilled staff members.



Slowing the process

Understaffing and lack of experience in routed frame-relay networks slowed a communications upgrade for 12 remote offices at Fugro, Inc., a Houston engineering consultancy.

"We looked at many service providers, but they didn't offer much past the basic circuit," said Craig Korenek, systems manager at Fugro. "NetSolve guaranteed monthly uptime through their proactive ProWatch management service, which monitors all our circuits and provides reports."

At one time, EDS supported Fugro, but "there's no comparison," Korenek said. "NetSolve is smaller, so they can tailor service to our needs. They found ways to save us money, and we didn't pay until the new network was installed."

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It is very hot today.
And very dry.
Ali has walked very far.
He is a strong man but
still he wonders,

"Why do they have to hold



This November, IBM is going to really heat up the desert.

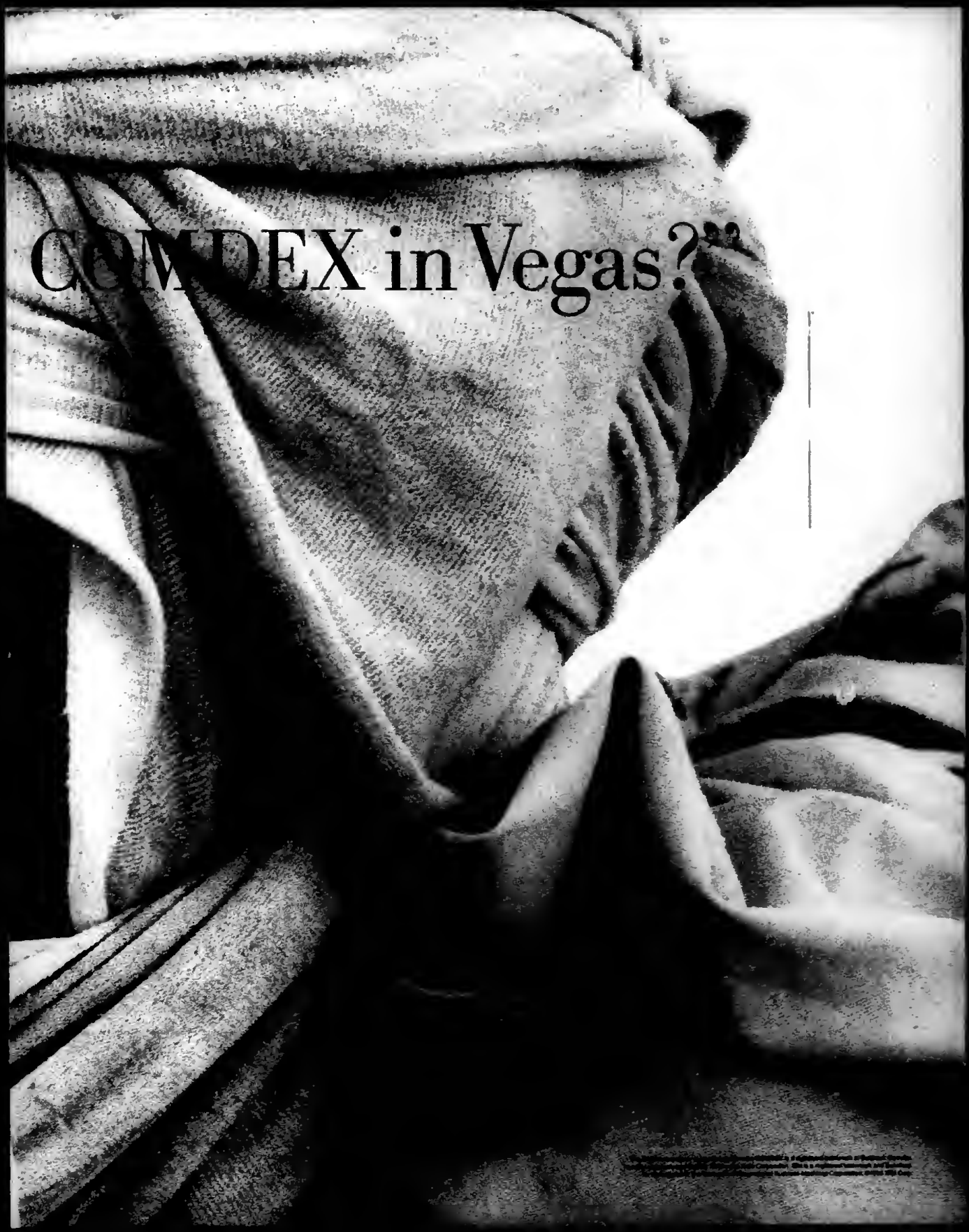
We've always been known for pretty sizzling technology, but in the past year, we've been issued 1,298 patents. That's more than any other company, ever.

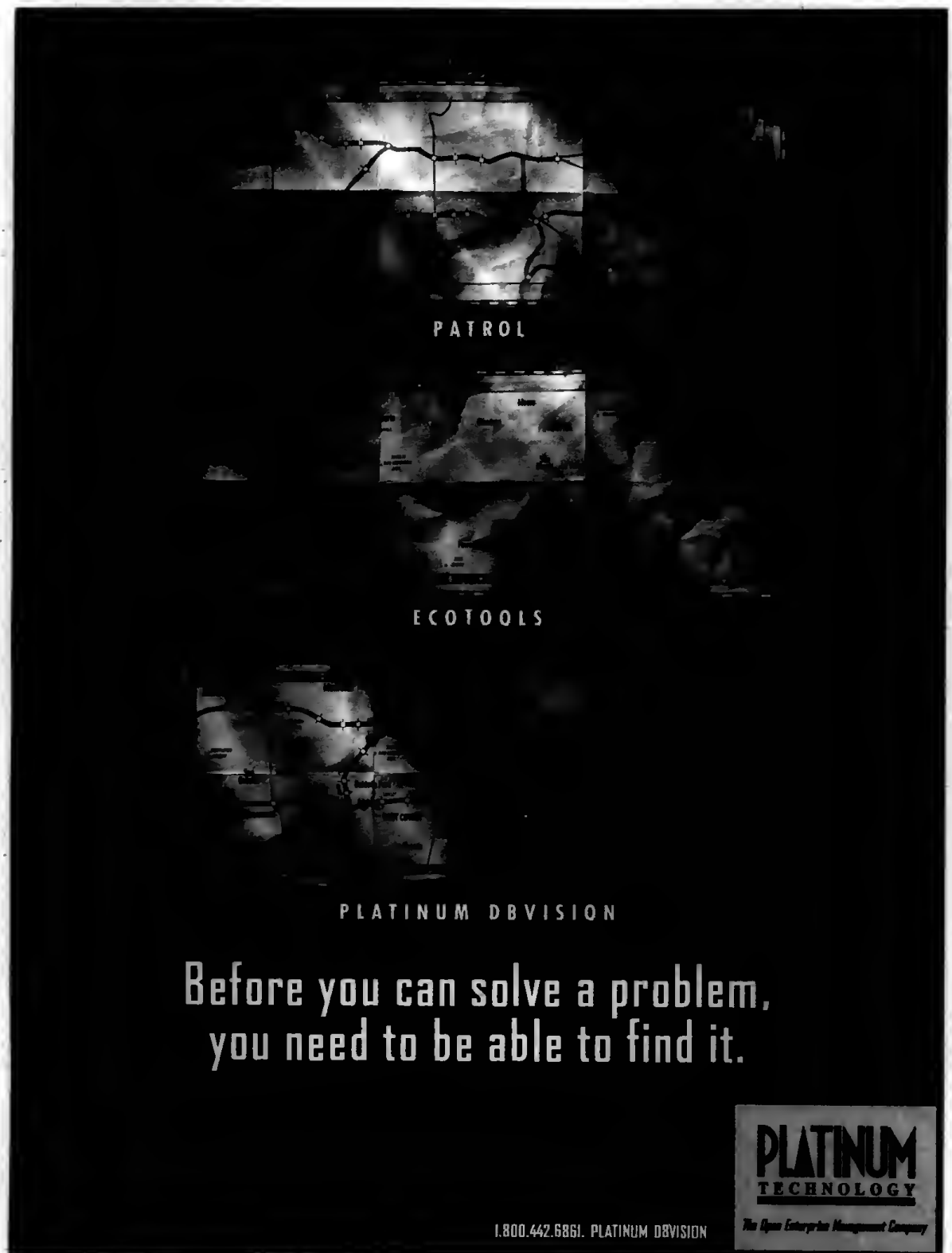
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DB2 FOR MVS LIVES!, 88
NEW PRODUCTS, 97

Large Systems

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Client/server vendors hone packages

Baan focuses Unix software offering on automotive industry

By Julia King

One-size software doesn't fit all businesses. Nor can a single developer meet all of a company's computing requirements.

For both of these reasons, Dutch developer Baan Co. is aiming its Unix-based enterprise client/server software at a few key vertical markets, the first of which is the automotive industry.

Baan, which is located in Ede, Netherlands, and has a U.S. headquarters in Menlo Park, Calif., has announced four new automotive-related applications, including software that enables carmakers and their suppliers to jointly schedule the production and delivery of components.

At a glance

Baan Co.

PRIMARY PRODUCT	HEADQUARTERS
Triton, Unix-based enterprise client/server software	Ede, the Netherlands (corporate) and Menlo Park, Calif. (U.S.)
1994 REVENUE	**WORLDWIDE CUSTOMER SITES**
$122 million	1,300

The $122 million company also has teamed up with a handful of niche software companies to boost the functionality of its suite of manufacturing and financial applications known as Triton.

For example, Sterling Software, Inc. in Dallas furnishes Triton with electronic data interchange capabilities.

Similarly, Baan has teamed with Wonderware Corp. in Cupertino, Calif., for shop floor scheduling software.

German carmaker Mercedes-Benz U.S. International, Inc. recently chose Triton software for its new plant in Tuscaloosa County, Ala. It was a combination of a bottom-line factor — price — and Baan's willingness to adapt to the luxury carmaker's needs that sealed the deal for Baan over SAP AG.

Baan, *page 92*

Datalogix challenges SAP with GEMMS update for process manufacturers

By Julia King

Datalogix International, Inc. has announced a major new release of its GEMMS manufacturing applications, including a key piece of software that funnels data from the factory floor into enterprise systems that process financial, human resources and all other business data.

The Valhalla, N.Y., company's target customers are large, multisite process manufacturers in the chemical, pharmaceutical and consumer goods industries — all favorite stomping grounds of enterprise software giant SAP AG.

Client/server software

Pricing for Release 3.2 of GEMMS — or Global Enterprise Manufacturing Management System — begins at $260,000 for a 16-user license. New features include the following:

- Software for better analyzing and allocating production costs.
- Several new application programming interfaces to integrate data from plant floor equipment and process control systems, such as valves and temperature gauges, with the enterprise system.
- The ability for manufacturers to offer buyer-specific and volume pricing information to individual customers.

Right on the money

The big benefit that the shop floor tie-in and new cost-analysis features deliver is more accurate and timely data on the actual cost of producing specific products.

By knowing precise costs, "you can both improve processes plus sell better because you know exactly what the margins are," said S. Zafar Kamal, an SHL Systemhouse, Inc. managing consultant at Huntsman Corp., a specialty chemical company and GEMMS user in Houston.

"What Datalogix has done with the new release is pretty much finish the swing," said Jane Biddle, director of client services at Benchmarking Partners, Inc. in Boston. "I'd say in some respects they are comparable to SAP. Our clients look at both. They look at Datalogix as part of the Oracle suite, and then they look at SAP."

In August, SAP also announced software for process manufacturers to link shop floor data into its R/3 enterprise system.

Nice pickup

Datalogix is partly owned by Oracle Corp., which bought approximately 15% of the $25 million company last year. Since then, revenue has grown almost 75%, to $43 million. The Datalogix manufacturing applications are tightly integrated with Oracle's financial software as well as with Oracle database technology.

Still, Datalogix is a software small fry compared with SAP, whose sales last year topped $1 billion, thanks largely to R/3.

On the other hand, Datalogix has much deeper process manufacturing expertise than SAP and its cadre of Big Six R/3 implementers.

SAP software is typically installed at a user site by one of the Big Six companies, all of which now have specialized SAP implementation practices.

"None of the Big Six has a clue what to do on the plant floor," said Bruce Richardson, vice president of research at Advanced Manufacturing Research, Inc. in Boston.

A big bite

Process manufacturing companies account for 40% of the $4 billion worldwide manufacturing software market. Annual software sales to this group are growing at a rate of 20% annually, according to Advanced Manufacturing Research.

Tandem answers the call

Vendor gives users a voice in slowed-down update process

By Michael Goldberg

Customers say Tandem Computers, Inc. has responded effectively to user complaints that the company's rapid-fire updates to its NonStop Kernel operating system were creating problems.

Tandem announced on Oct. 26 that it will offer users a cafeteria-style menu for selecting revisions in the operating system for its Himalaya server line. Instead of bundling bug fixes and new functions, the company will provide a list for users to select whether they want bug fixes, new features or both. Typically, Tandem releases updates to its NonStop Kernel operating system every six months.

Dave Wilson, Tandem's product marketing manager for parallel software, said the company would begin work on the new release process immediately and would have it fully in place by next fall's International Tandem Users Group (ITUG) conference.

ITUG President David Lawler had complained on Oct. 23 that longtime Tandem users were struggling to stabilize their mission-critical systems and keep up with new operating system versions. Lawler said users liked what they heard in Tandem's reply.

"They've demonstrated a willingness to work with their existing customers," said Lawler, a technical consultant at CrestCo Ltd., a financial information systems company that tracks London Stock Exchange transactions.

Longtime Tandem watcher Richard Winter, president of Winter Corp. in Cambridge, Mass., said Tandem appeared to have a strong answer for concerns in its installed base.

"It's a good kind of problem for Tandem to be having," Winter said. With most mature product lines, the question is if the vendor is investing in development — and Tandem clearly is, he said.

Watch out

In a community that has traditionally relied on Tandem to provide fail-safe computers, systems professionals watch changes to Tandem policies with a wary eye, users and observers said.

Mark Pleticha, a Tandem systems support specialist at Wells Fargo Bank in San Francisco, said users must be careful that the new combinations of software code — either just bug fixes or new functions by themselves — don't introduce problems to their systems.

From the third-party vendor's viewpoint, Tandem's moves "sound like a great plan," said Philip Landau-Smith, a database middleware provider at ITI, Inc. in Paoli, Pa. "You can pick where you want to stop introducing upgrades" without adding new functions, he said.

DecisionSuite update puts agents to work

Analytical processing tool also adds collaboration features

By Dan Richman

Sales of three key items slump one day in 12 of a retailer's 20 stores. It is an important fact to know but one that would go unnoticed if a software agent weren't on the job.

The agent is a small program that can be customized to respond to certain events. In this case, it can send electronic mail to the national sales manager and prompt him to look at the data to determine the cause of the slump.

Agents are featured in Version 3.0 of DecisionSuite, a client/server tool from Informatina Advantage in Minneapolis. DecisionSuite performs on-line analytical processing of relational data.

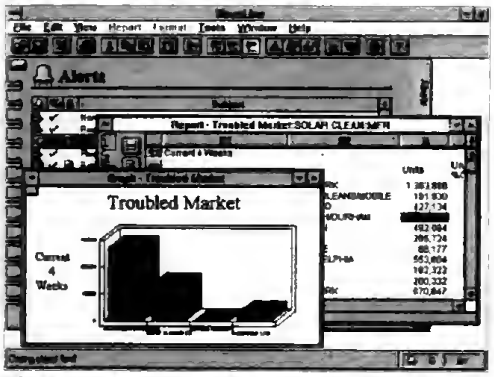
Version 3.0, set to be announced this week, will let users collaborate on reports and use filters that exclude user-selected data. The product also features a new user interface.

Beta user Bob Jackson, manager of development support at Liberty Health Insurance Co. in Toronto, said Version 3.0 has features his company needs.

"The agent technology lets us automate a lot of things people used to have to do manually, and the user interface improvements are very good," he said.

Liberty Health is giving DecisionSuite 3.0 to 10 actuaries who use Windows. They will run it against Red Brick Systems, Inc.'s Warehouse under Hewlett-Packard Co.'s HP-UX to assess trends in drug claims made against the company, Jackson said. The objective is twofold: to more accurately set rates for health insurance and to test whether DecisionSuite could handle as many as 200 users in a proposed application for examining trends in claims and enrollment.

The collaboration feature lets users forward reports annotated with their observations about the data they analyze. It also lets recipients analyze the data independently and add their own conclusions.



Information Advantage's DecisionSuite 3.0 *features agents, collaborative capabilities and a new pricing/functionality structure*

Choices, choices

DecisionSuite 3.0 aims to be more economical than its competitors and its own previous implementations. It has four modules of increasing power and sophistication, and sites may buy only the modules they need.

The basic module, InfoAlert ($45), lets end users receive alerts from the server-based agents and scan reports, although they can't analyze data fully by adding new dimensions. For example, in the scenario above, the user couldn't view projected sales of the three products vs. their actual sales with the basic module.

However, the NewsLine module ($145) removes that limitation, and Analysis ($895) offers all of those capabilities and lets power users create server-based agents. The Workbench module ($2,995) is geared toward the needs of systems administrators.

Like the versions before it, DecisionSuite 3.0 is built on a three-tier architecture. This architecture comprises Windows clients, a dedicated server that runs under several Unix variants and manages all agents and privileges, and the data warehouse. DecisionSuite 3.0 runs on several database systems, including IBM's DB2/6000 and systems from Oracle Corp., Sybase, Inc., Informix Corp., Red Brick Systems and Tandem Computers, Inc.

Information Advantage claims to specialize in large companywide installations. Its largest site uses DecisionSuite with a 600G-byte, 820-user Tandem relational database management system. It generates 5,000 reports a week and has average response times of 15 seconds, said Larry Ford, the company's president.

Principal competitors include DSS Agent from Microstrategy, Inc. in Vienna, Va., and MetaCube from Stanford Technology Group in San Francisco.

DB2 for MVS: Alive and thriving

By Torsten Busse
BERLIN

Forget object-oriented databases and client/server models. IBM's mainframe database DB2 for MVS is alive and well.

Neither object-oriented database technology nor distributed Unix-based databases will replace mainframe database management systems any time soon, according to users gathered here recently for the International DB2 User Group.

Mainframe databases

They cited stability, reliability, good performance, compact systems management capabilities, investment protection and sufficient vendor support as some reasons for their continuing loyalty to IBM's big iron database.

Even users venturing into the client/server world with new applications say there is a place for DB2/MVS.

"Besides superior functionality, it has cost and systems management capabilities, which are developed, paid for and work well. [That] was a decisive factor in staying with DB2/MVS over Sybase's SQL Server for Unix," said Charles Anesi, systems manager and database administrator at Norwest Technical Services, the Minneapolis-based information systems branch of bank Norwest Corp.

Norwest recently implemented a distributed, multisite telemarketing application that links Windows-based PCs over a TCP/IP-based wide-area network back to a DB2/MVS database via IBM's Distributed Connectivity Services/6000. A cost comparison of Unix and mainframe databases showed that DB2/MVS will be more cost-effective in the long run, Anesi said.

Staying put

The cost and functionality of Unix also is keeping mainframe DB2 at other sites. "Moving to Unix is impossible for us," said Jan Larrson, database manager at Postgirot Bank in Stockholm. "The migration tools alone for moving DB2/MVS data to, say, an Oracle Unix system cost too much."

Postgirot Bank, the banking arm of Swedeo's postal service, decided to develop all of its applications for DB2/MVS years ago. It has never reconsidered that decision, Larrson said. Only when Unix databases offer real support for data exchange with DB2/MVS will the Swedish Bank revisit the migration issue, he said.

Unix isn't an option for a large Swiss bank, either. "Unix is not going to do it for us," said a database engineer at the bank who requested anonymity. "It's not going to support the number of users and the complexity of our applications."

At this point, most users are watching the development of object-oriented database management systems with great interest but also with a healthy share of skepticism.

"There are no standards for object-oriented databases yet, so we'll wait and see," said Svere Klonteig, database administrator at Norway's UNI Storebrand, an insurance company in Oslo.

Busse writes for the IDG News Service's Munich bureau.

Simplified sign-on brings enhanced security features

By Dan Richman

Open Horizon, Inc. in Belmont, Calif., has announced a product to simplify and secure the database sign-on process.

Database utilities

The product, Connection Database Single Sign-On, eliminates the need for users to sign on to a network, then sign on to each vendor's relational database management system and databases, said Chip Overstreet, Open Horizon's director of marketing.

Connection Database instead allows a single sign-on. This eliminates confusion, redundancy and administrative headaches, Overstreet said.

Even more secure

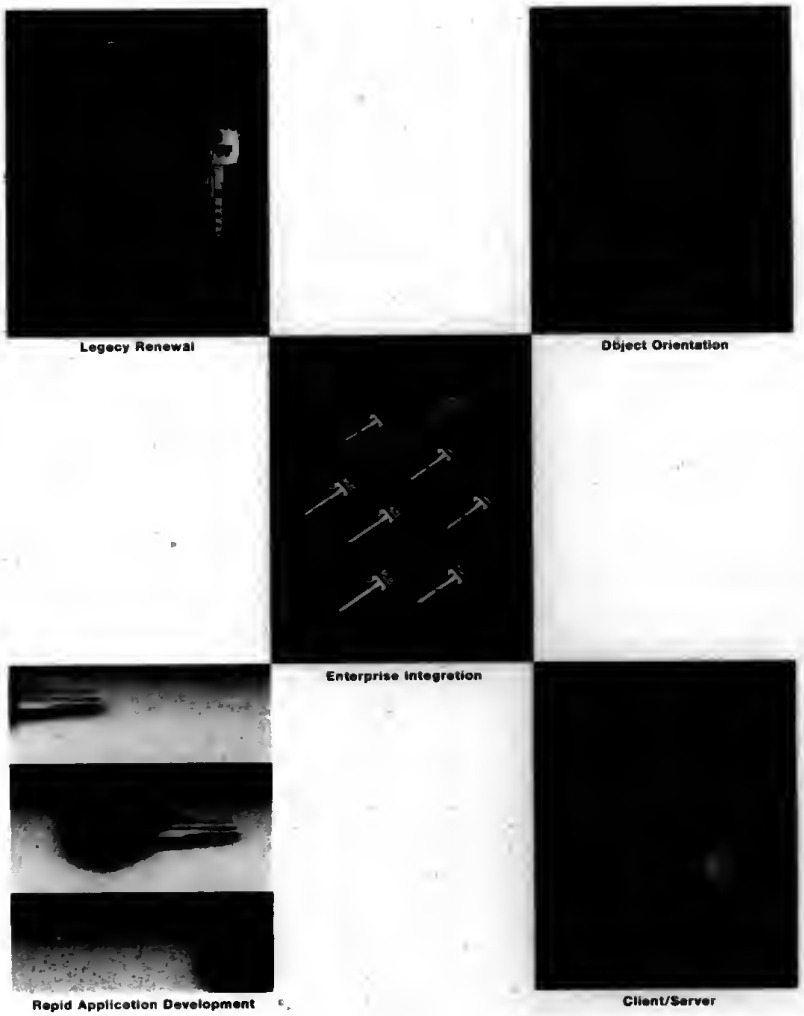
Open Horizon claims the product increases security by encrypting transactions between client applications and the server. And with Open Horizon, there is no need to send passwords over the site's network.

John McCarthy, manager of information security at York University in Toronto, said Connection Database Single Sign-On has been "extremely useful" for password unification as well as security enhancement.

"We couldn't have achieved those without extraordinary cost," McCarthy said. He added that the company's technical support has been "superb."

Connection Database Single Sign-On is built on Kerberos, the Open Software Foundation's security framework. The OSF's Distributed Computing Environment also is required on the network but isn't included in the $295 per client list price.

The product is available immediately and runs on clients under Windows, Unix and OpenVMS. It works with databases from Oracle Corp., Sybase, Inc. and Informix Corp. as well as IBM's DB2/6000 and Microsoft Corp.'s SQL Server.



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Baan

CONTINUED FROM PAGE 87

"Baan software was a better buy, and Baan was more receptive to the idea of customizing their product. That is why we chose it," said Wayne Cerny, an IBM consultant and project leader on the Mercedes-Benz installation.

The factory is scheduled to produce 65,000 sport utility vehicles annually beginning in 1997.

Sounds good

Mercedes-Benz's plans call for integrating the Baan software with a shop floor production control system being developed by IBM and off-the-shelf software products from IBM and others. Once the implementation is completed prior to the planned opening of the plant in late 1996, ongoing support will be turned over to Integrated Systems Solutions Corp., IBM's outsourcing arm.

Such comments are music to the ears of M.R. Rangaswami, Baan's vice president of worldwide marketing, who is charged with positioning Baan as the low-cost alternative to SAP AG.

Rangaswami said that compared with SAP's R/3 software suite, Baan "is typically 20% to 40% less."

SAP has no set pricing on its modules. Rather, pricing on its software is user-based and depends on the scope of applications purchased.

Consulting fees on Baan implementations are also less costly, averaging $2 for every $1 in licensing fees, Rangaswami said other enterprise software companies show consulting fees ranging from $5 to $10 for each dollar spent on software licenses.

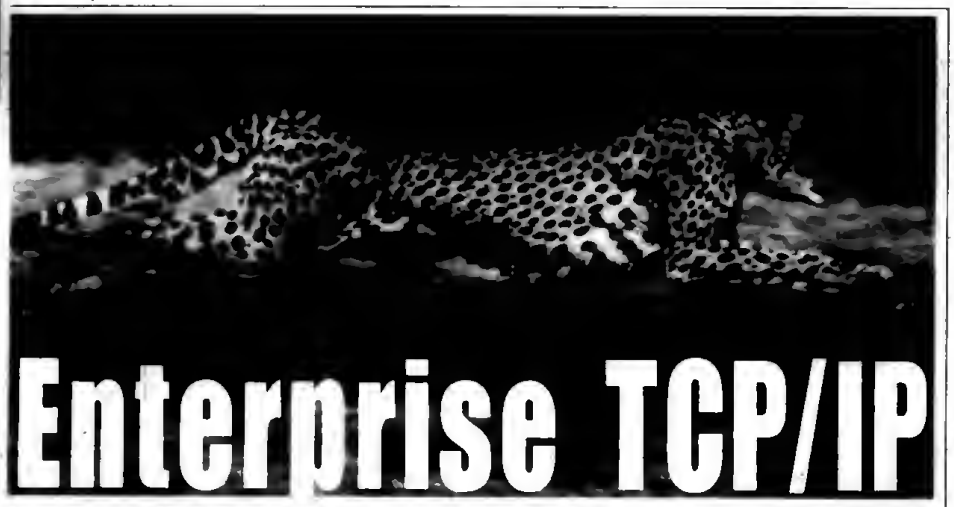
But just how quickly America's big automakers and suppliers embrace the Dutch software company remains to be seen.

"What Baan is trying to do [in the automotive industry] is get a few key customers to tell them exactly what they need and to really teach them the industry," said Gisela Wilson, director of the vertical applications program at International Data Corp. in Framingham, Mass.

"The idea seems to be to start with the suppliers and work their way up to the assemblers," she added. "They can't go into Ford and General Motors as a small foreign company."

Big hit

Baan made its first big splash in the U.S. last year when it bested SAP AG to win a $14 million enterprise deal with The Boeing Co. in Seattle.



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Briefs

Web gateway ships

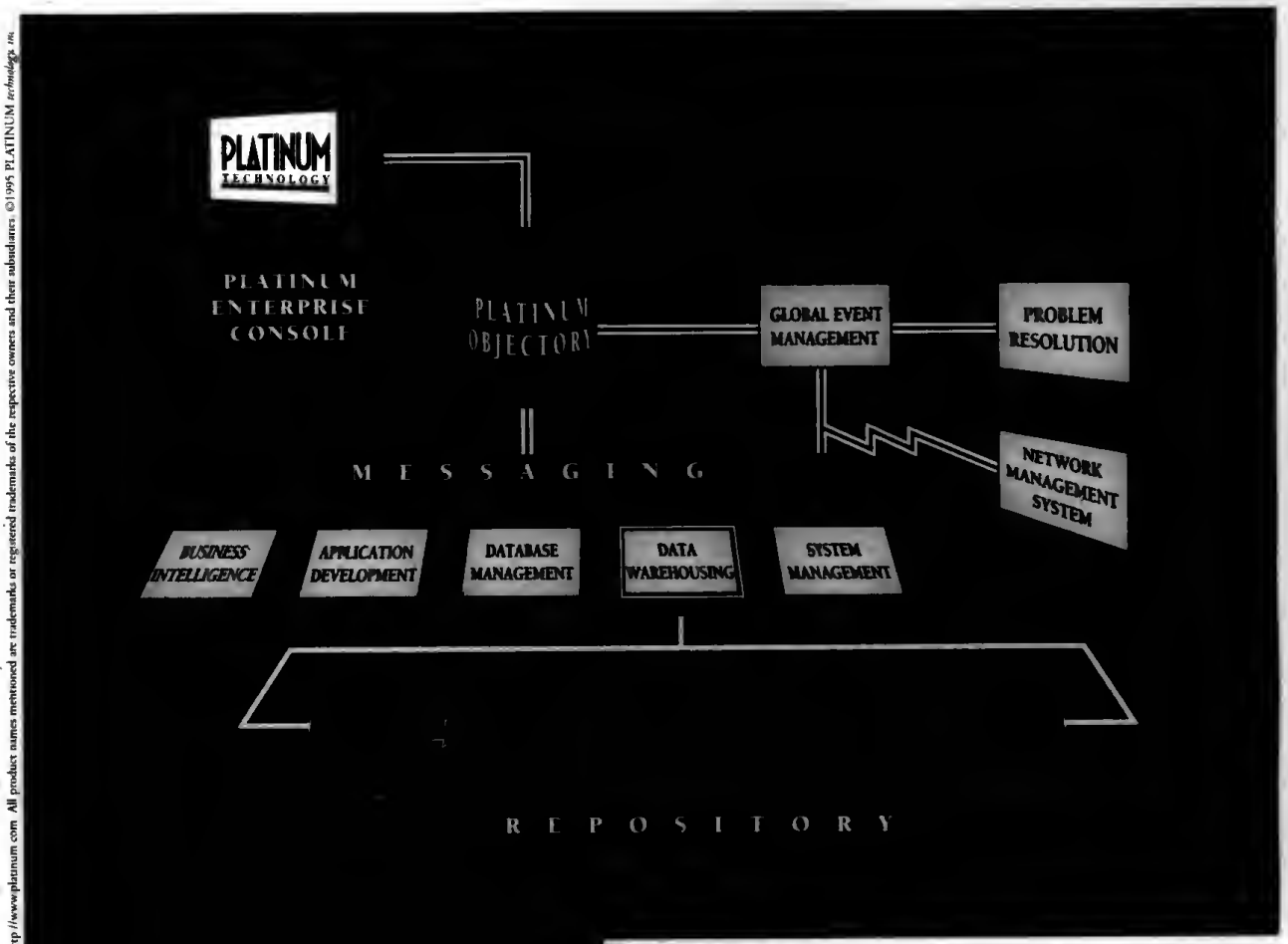
Seattle-based Nomad Development Corp. last week shipped WebDBC 2.0, an upgrade of its gateway designed to link relational databases to World Wide Web applications. It is priced at $295 to $895, depending on the number of users.

FBI names computer chief

Federal Bureau of Investigation Director Louis J. Freeh last week announced the appointment of Carolyn G. Morris to head the FBI's Information Resource Division, which has 2,000 employees and a budget of $200 million. Morris will oversee all automation matters for the FBI and research and development for the new National Crime Information Center, a nationwide computerized system for law enforcement.

Intersolv buys firm

Intersolv, Inc., a vendor of data warehousing products in Rockville, Md., has acquired Brussels-based TechGnosis International, Inc. in an $80 million stock swap. With TechGnosis' SequeLink, users will be able to access multiple vendors' relational and nonrelational databases simultaneously, Intersolv said.



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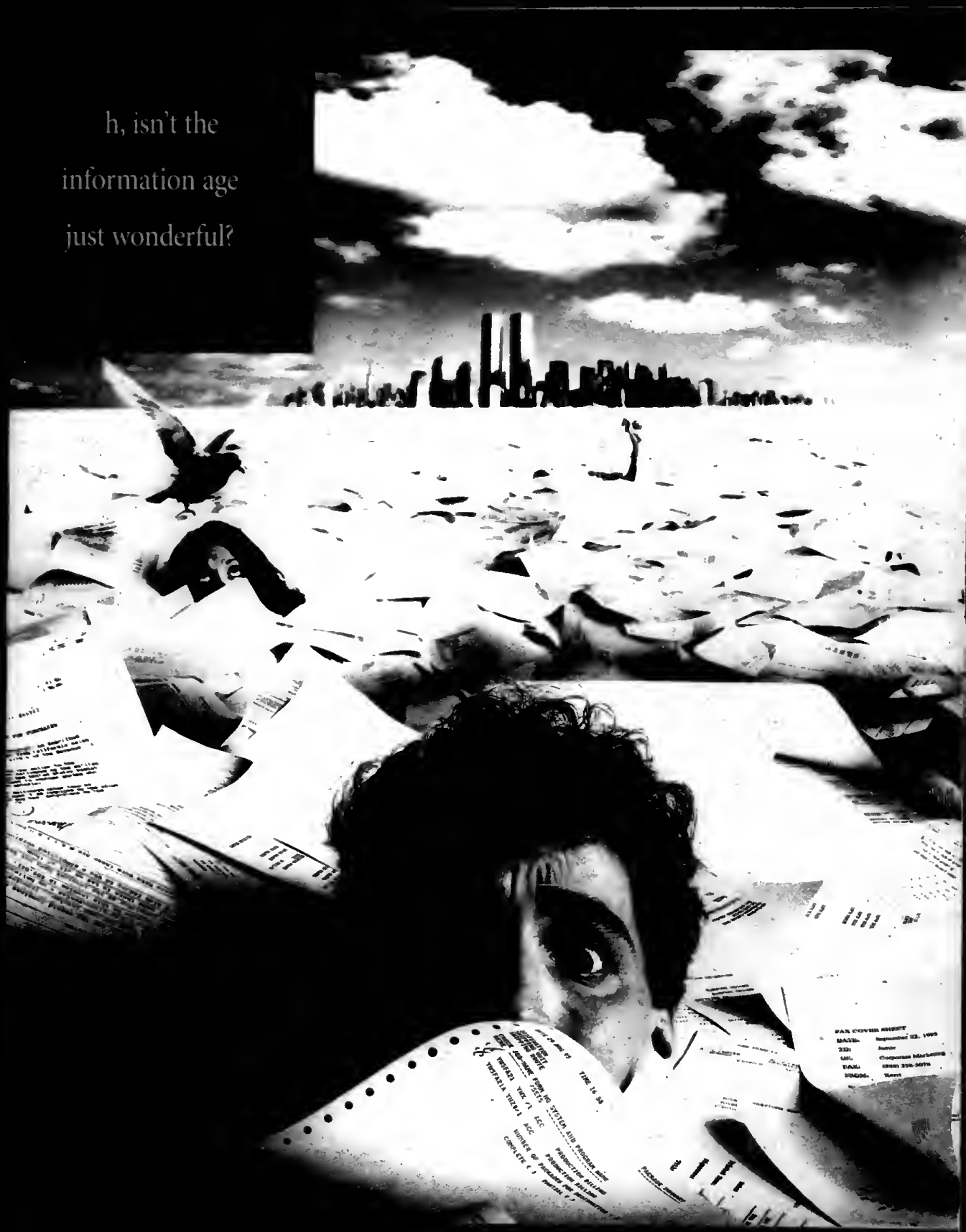
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Brio Technology, Inc. has introduced BrioQuery 3.5, a front-end tool for IBM's AS/400.

According to the Mountain View, Calif., company, BrioQuery 3.5 provides front-end data access to AS/400 data warehouses. With direct access, PC- and Macintosh-based clients can analyze data directly. It has a drag-and-drop interface that lets users create customized reports and minimize information systems installation and support efforts.

BrioQuery 3.5 includes features for expanded data modeling, which lets users develop virtual tables and combine information from more than one physical table. It also lets users quickly see results by balancing the load between the server and client. It has information delivery system security and control features that let users track user query activity information.

Pricing for BrioQuery 3.5 starts at $595.

▶ *Brio Technology*
(415) 961-4110

Wall Data, Inc. has introduced Rumba AutoCode, a development tool for IBM AS/400 data.

According to the Kirkland, Wash., company, Rumba AutoCode is a tool for developing graphical client/server applications using data residing on IBM mainframes and AS/400s. It generates host navigation code to let users access legacy data, build Windows graphical interfaces and integrate the generated code into a variety of development environments.

Enterprises can use Rumba AutoCode to re-engineer applications from the client end and change workflow without modifying the host, using development tools such as Microsoft Corp.'s Visual Basic and Visual C++ or Powersoft Corp.'s PowerBuilder. It was designed for installations that want improved data utilization where legacy systems no longer reflect current workflow patterns.

Rumba AutoCode costs $995 per developer license.

▶ *Wall Data*
(206) 814-9255

4th Dimension Software, Inc. has announced Control-M, a cross-platform production control and scheduling product.

According to the Irvine, Calif., company, Control-M is a mainframe-class systems management product for IBM's RS/6000 SP. It has an Enterprise Control Station component with an interface that lets administrators use the RS/6000 SP as the central point of production control across all managed platforms.

Control-M stores definitions, submits jobs and monitors production on the RS/6000 SP. It also performs job status analysis, allowing administrators to evaluate system productivity.

Control-M has cross-platform interoperability with IBM's MVS and OS/400 and Digital Equipment Corp.'s VMS as well as major Unix platforms, including Hewlett-Packard Co.'s HP-UX and Sun Microsystems, Inc.'s SunOS and Solaris. Support for Microsoft Corp.'s Windows NT and IBM's OS/2 is planned for later this year.

Pricing for Control-M starts at $8,400 per node.

▶ *4th Dimension Software*
(714) 757-4300

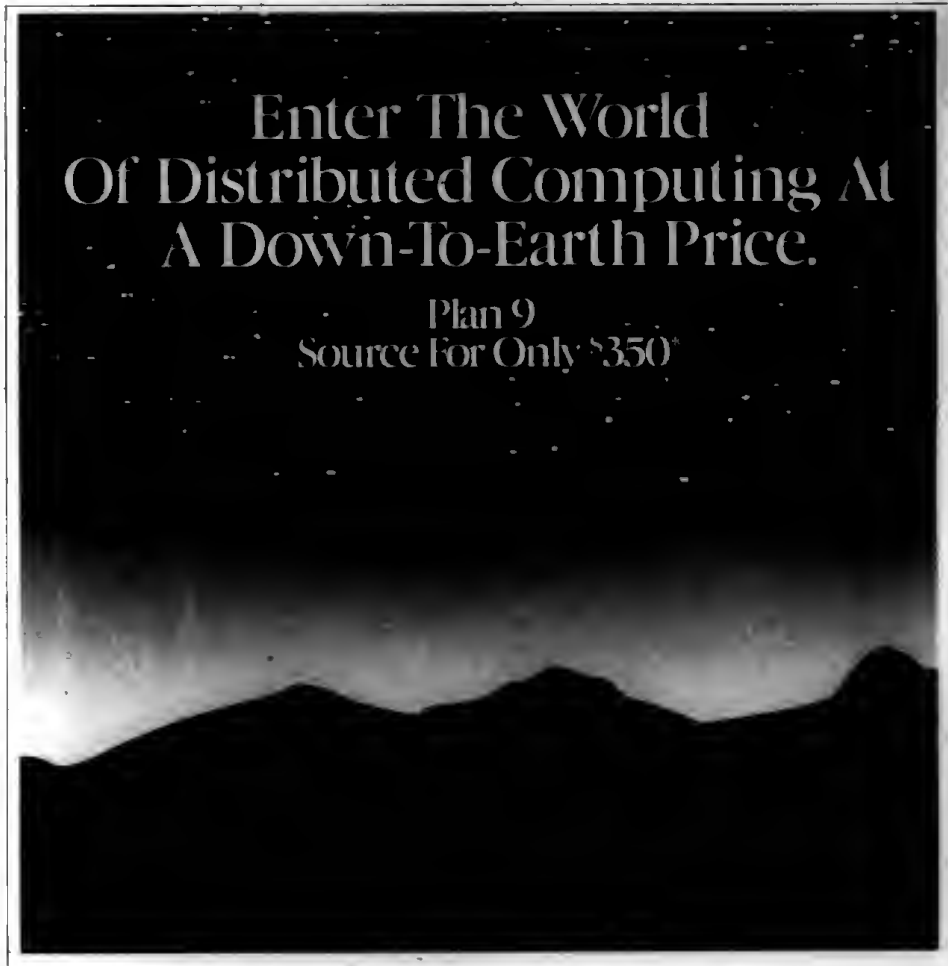
Performance Associates, Inc. has rolled out PAI/O Driver, a product for IBM MVS mainframes.

According to the Palm Desert, Calif., company, PAI/O Driver includes software, direct-access storage device acquisition methodology and a reporting device. It lets users map internal structures, track algorithms and evaluate capabilities. Users can also stress-test microcode levels, burn in new actuators and determine available subsystem capacity.

PAI/O features a standard engineering test series and includes analysis software for the development of customer-specific tests.

PAI/O is a site-licensed product with an initial license fee of $30,000 per user site. It has an annual renewal fee of $10,000.

▶ *Performance Associates*
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NEW PRODUCTS, 102

Application Development

CASE • LANGUAGES • TOOLS

Bank 'selling' objects to managers

By Frank Hayes

Many organizations pay lip service to the notion that information systems development should be driven by users. But Bank of America is putting its money where its mouth is by taking its drive to use object-oriented information technology directly to business managers.

In early October, the San Francisco-based bank held a two-day internal technology show to explain the technology to users whose budgets will have to pay for new object-oriented systems, said Tsvi Gal, chief technology officer at Bank of America's information technology nperatinn in Concord, Calif.

The bank bas tsunched an internal effort called BankSoft to design and build business objects that can be reused within the hank and bave the potential to be sold outside the bank. Rather than try to define business objects that can be used by the entire organization, BankSoft will select key areas and create objects in those areas with an eye toward more widespread use in the future.

"We're looking for quick successes," Gal said. "We should have several appbcations in production within six months."

Shortcuts

With object technology, information is organized the way it is used in a business. For example, the information is presented in terms of a customer, a transaction or a bank business nnit rather than as records and fields in a database. Objects can make it easier to share information among business units and thereby shorten the time required to build new applications.

But sharing isn't a familiar concept to most bankers.

"Traditionally, banks are based nn lines of business that don't share code and don't even share customers half the time," said Mark Hardie, n technology analyst at The Tower Group in Wellesley, Mass.

Bank of America does share data among its 30 business units through a companywide data warehouse. The bank's object technology drive will start with efforts to create some standard ways nf looking at that data.

"You'd think the definition of something like n deposit would be obvious, but there are lots of different definitions throughout a bank's systems," said Richard T. Griffith, president of Griffith & Associates in San Francisco. "Once you have n single set nf those business objects, it's a fundamental change."

Gal said Bank of America is in discussions with several other financial institutions that have expressed interest in licensing the business objects nnce they are developed. Such deals are the ultimate form of reuse, be said.

But reselling business objects may prove too great a political challenge, said DuWayne Peterson, president nf DuWayne Peterson and Associates in Pasadena, Calif. "It sounds good, but it's tough selling that idea to the business nnit [that is] paying for this development. That manager is not necessarily too excited about sharing with competitors," he said.

Bank of America will implement its business objects by:

- **Designing** reusable business objects with an eye toward selling them to other financial institutions.
- [illegible] tactical applications from business objects designed for more widespread reuse.

Sybase keeps Powersoft promises

Acquisition fallout minimal, but users remain on edge

By Frank Hayes

A quiet year has passed since Sybase, Inc. announced it would buy Powersoft Corp., but some users are still concerned about possible fallout from the acquisition.

These concerns linger despite the fact that database vendor Sybase in Emeryville, Calif., has taken a hands-off approach toward Concord, Mass.-based Powersoft, whose Windows-based PowerBuilder application development tool set also works with databases from Oracle Corp., Informix Software, Inc. and other vendors.

At tbe time nf the merger, users and database vendors expressed concern tbnt PowerBuilder would become a Sybase-only tool set.

"So far, I have no evidence to say tbat bas happened," said Mary Gibbons, assistant vice president for systems and programming at Standard Insurance Co. in Portland, Ore., and an Oracle user.

"If it's up to the Powersoft people, they want to continue to remain independent of their owner," said Alan Levin, principal at Decision Support Technology, Inc., a PowerBuilder value-added reseller in Cambridge, Mass.

But concerns linger. When PowerBuilder 4.0 was introduced last December, some functions fnr using Informix databases had several bugs, said Jim Rogers, lead analyst/developer at American Express Travel Related Services, Inc. in Salt Lake City.

"I didn't get tbe impression they were committed to Infnrmix. We're extremely committed to Infnrmix — more so than to PowerBuilder," he said, adding that he eventually found workarounds for the problems.

But that experience isn't universal.

"We're an Oracle shop, and each release of PowerBuilder continues to support enhancements that Oracle offers," said Don Weimann, staff specialist for application delivery at Chevron Corp. in San Ramon, Calif.

Other issues

Other problems at Powersoft over the past year seem to have nothing to dn with tbe merger, users said. Versions nf PowerBuilder fnr Unix and Macintosh were planned for delivery last spring, but problems delayed the first Unix version until September, and the Macintosh release has yet to nhip.

Powersoft's shift tn support has irritated some users. "As a group, we just decided not to call their support anymore. It took too long to get problems resolved," said Rogers, who now depends on user groups and Powersoft'n support forum on CompuServe for solving thorny PowerBuilder problems.

Although it has largely left Powersoft alone, Sybase has shifted some of its tools developers in Powersoft to work on projects such as improved version control.

But even though the merger's impact on day-to-day users of PowerBuilder seems minimal, the questions about the product's continued database independence remain.

"We have not seen anything that would drag us away from PowerBuilder," Gibbons said. "But up until the merger, PowerBuilder was a strategic direction for us. Since then, we're looking at other options, and I think that's just prudent on our part."

Delays plague Powersoft

AUGUST 1994
Powersoft outlines plans for Macintosh and Unix versions of PowerBuilder

NOVEMBER 1994
Sybase announces it will acquire Powersoft

DECEMBER 1994
PowerBuilder for Windows 4.0 released

FEBRUARY 1995
Sybase/Powersoft merger is completed



Sybase Chairman, CEO and President Mark Hoffman

MARCH 1995
PowerBuilder for Macintosh delayed due to beta-test problems

SEPTEMBER 1995
PowerBuilder for Unix on Sun announced



Powersoft CEO Mitchell Kertzman

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Dr. James H. Goodnight
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4

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5

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Time for VisualAge to act its age

Version 3.0 includes object classes and tools

By Craig Stedman

IBM wants its object-based VisualAge development tool to grow up.

Redoubling efforts to resurrect its application development image, IBM last month introduced a version of VisualAge for Smalltalk that provides object classes and tools for creating distributed applications. Until now, VisualAge has forced users to do most of their processing at the client level.

The distributed development made possible by Version 3.0 is limited by the fact that IBM hasn't added mainframe support in Smalltalk, which is one of the leading object languages. Smalltalk for MVS was supposed to ship this year, but now IBM officials are not committing to a release date. The product has experienced performance scaling problems on large transaction applications.

However, several VisualAge users said Version 3.0 should be much more flexible than previous releases. Objects and business rules can now be stored on a database server instead of on client PCs, and that storage option should ease development complexity and decrease network traffic, users said.

"You can execute everything at the server and just return the result to be displayed on the [end user's] screen, which involves much less data [transfer]," said C. F. Wong, object specialist at Bank of Montreal's computing center in Toronto. "It's a much better way of using computer resources."

The bank used the previous release of VisualAge for Smalltalk to write an application that gives branch-office workers on-line access to information about its products and services. Wong said he expects to switch to Version 3.0 for future applications, although he said mainframes have to be supported for the bank to take full advantage of the distributed capabilities.

Version 3.0 may eliminate the need to process any SQL database calls at the client level, said Rod Riley, assistant director at the University of Alabama's Seebeck Computer Center in Tuscaloosa. The center is beta-testing the release and is planning to use it to develop an on-line budget for the university.

The first cut at the budgeting application still will be weighted toward client-level processing when it is implemented early next year, Riley said. But future revisions are expected to have a more distributed bent.

It all adds up

Crunching queries at the PC "does start to add up, especially in something like budgeting where there's a great deal of SQL operations going on," Riley said. Moving objects to a server also should reduce application maintenance headaches, "since you'll just have to rebuild the central part at the database level," he added.

The distributed approach should yield better application scaling and make it easier to tailor graphical user interfaces for end users in different departments, said Steve McClure, an analyst at International Data Corp. in Framingham, Mass. Hewlett-Packard Co. already provides a distributed Smalltalk tool based on technology from ParcPlace-Digitalk, Inc. in Sunnyvale, Calif.

Version 3.0 of VisualAge for Smalltalk also provides a performance boost and several other welcome new features, according to beta testers (see box). The C++ version of VisualAge eventually will get a similar makeover, but IBM didn't say when that will happen.

The small facts

Version 3.0 of IBM's VisualAge for Smalltalk development tool includes the following:

ADDED FUNCTIONS:
- Support for developing distributed applications
- AIX development and runtime support
- Object-based report writer
- Faster database access and native Oracle support
- Multimedia authoring tools for OS/2 and Windows

PLATFORMS SUPPORTED:
- OS/2
- AIX
- Windows 3.11
- Windows 95 (beta, Q1 1996)
- Windows NT (beta, Q1 1996)
- HP-UX (beta, first half of 1996)

PRICE AND AVAILABILITY
$1,499 for single-user version, $3,799 per user for team version. Ships Nov. 30

[redacted]

Blue Sky Software Corp. has introduced RoboHelp 95, a help authoring tool for Microsoft Corp.'s Windows 95, Windows 3.x and Windows NT.

According to the La Jolla, Calif., company, RoboHelp 95 has a SmartHelp OLE control that eliminates the need to program context-sensitive help into any Windows application developed with Microsoft's Visual Basic 4.0, Visual C++ 4.0, Access and Visual FoxPro 3.0.

Visual Basic and Visual C++ users can drag and drop the included help button in the application's forms and visually select any help file without needing source code. The help button is linked automatically to the selected topic, and the context-sensitive help link is created between the application and help file.

RoboHelp 95 costs $499.

▶ *Blue Sky Software*
(619) 459-6365

Aisys Intelligent Systems Ltd. has unveiled DriveWay-302.

According to the Tel Aviv company, DriveWay-302 is a Windows-based software tool that generates device driver source code in C for Motorola, Inc.'s MC68302 microprocessor.

DriveWay-302 has two parts: a user interface shell and a knowledge base. The interface includes screens and operation menus for defining the required chip operation, setting initial values and generating source code. The knowledge base includes the components required by the interface to generate a device driver for the supported chip.

DriveWay-302 will be distributed by Intermetrics Microsystems Software, Inc. in Cambridge, Mass.

DriveWay-302 costs $1,995.

▶ *Aisys Intelligent Systems*
(617) 661-0072

ViewStar Corp. has introduced ViewStar 4.2, an object-oriented design tool for workflow applications.

According to the Alameda, Calif., company, ViewStar 4.2 lets developers use third-party application building tools such as Microsoft Corp.'s Visual Basic, Powersoft Corp.'s PowerBuilder and Borland International, Inc.'s Delphi to build ViewStar workflow and document imaging applications.

ViewStar 4.2 features the business process interface (BPI), a combination of application programming interfaces (API) and Microsoft Corp.'s OLE 2.0. Using BPI, developers can create applications in any client-level application development environment by placing ViewStar's OLE controls on a form and using the API to customize the functions of these controls. ViewStar 4.2 allows multisite workgroup development through a standard Microsoft messaging API.

Pricing for ViewStar 4.2 starts at $35,000 for a 10-user system.

▶ *ViewStar*
(510) 337-2000

Atria Software, Inc. has introduced ClearTrack, a client/server change request management (CRM) system.

The Lexington, Mass., company said ClearTrack is a customizable system that tracks defects and enhancement requests throughout the software cycle. CRM lets teams record change requests, track evolving status and obtain metrics through query and reporting facilities.

ClearTrack includes an embedded, scalable database and a tracking application that provides query and reporting capabilities. It integrates with Atria's ClearCase configuration management system.

ClearTrack is available for several Unix platforms, including Hewlett-Packard Co.'s HP-UX and Sun Microsystems, Inc.'s SunOS and Solaris. Support for Microsoft Corp.'s Windows NT and Windows 95 are planned for later releases.

ClearTrack costs $795 for a single-user license.

▶ *Atria Software*
(617) 676-2400

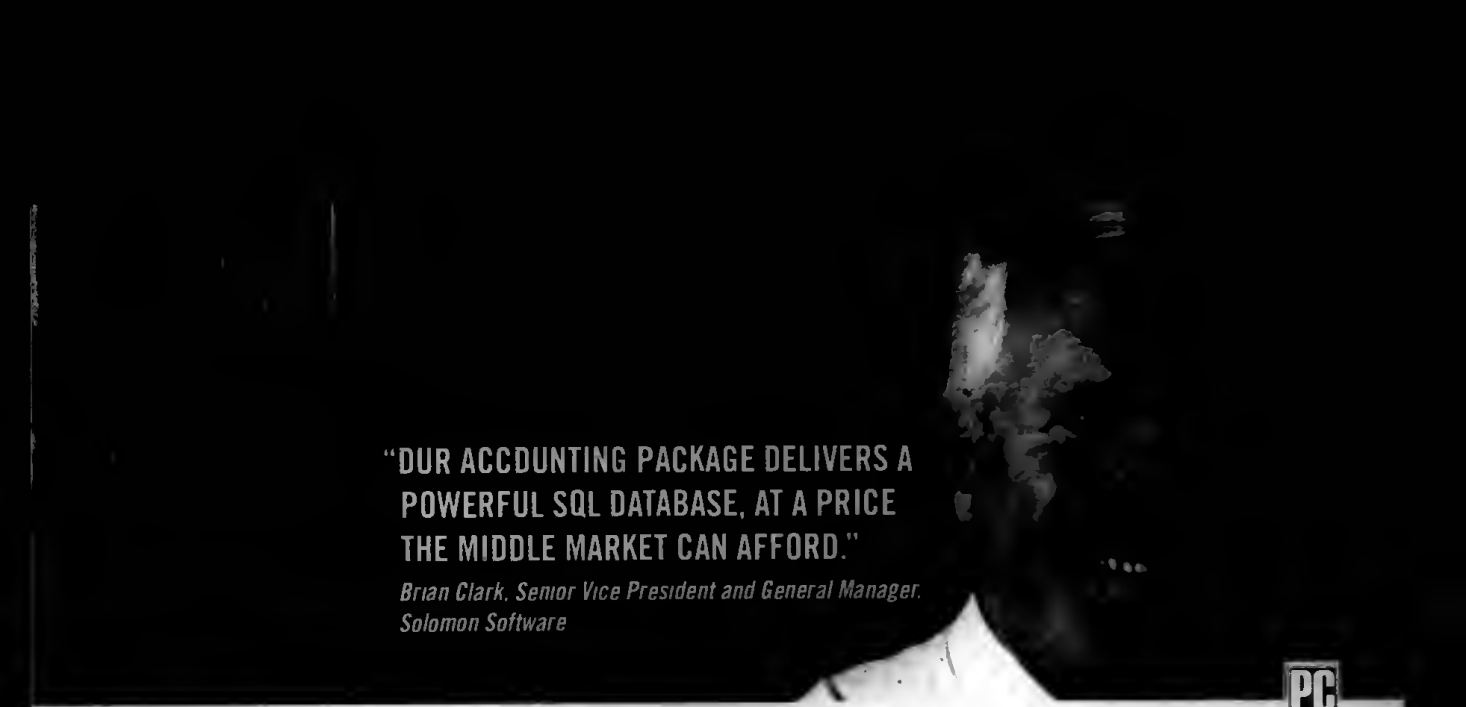
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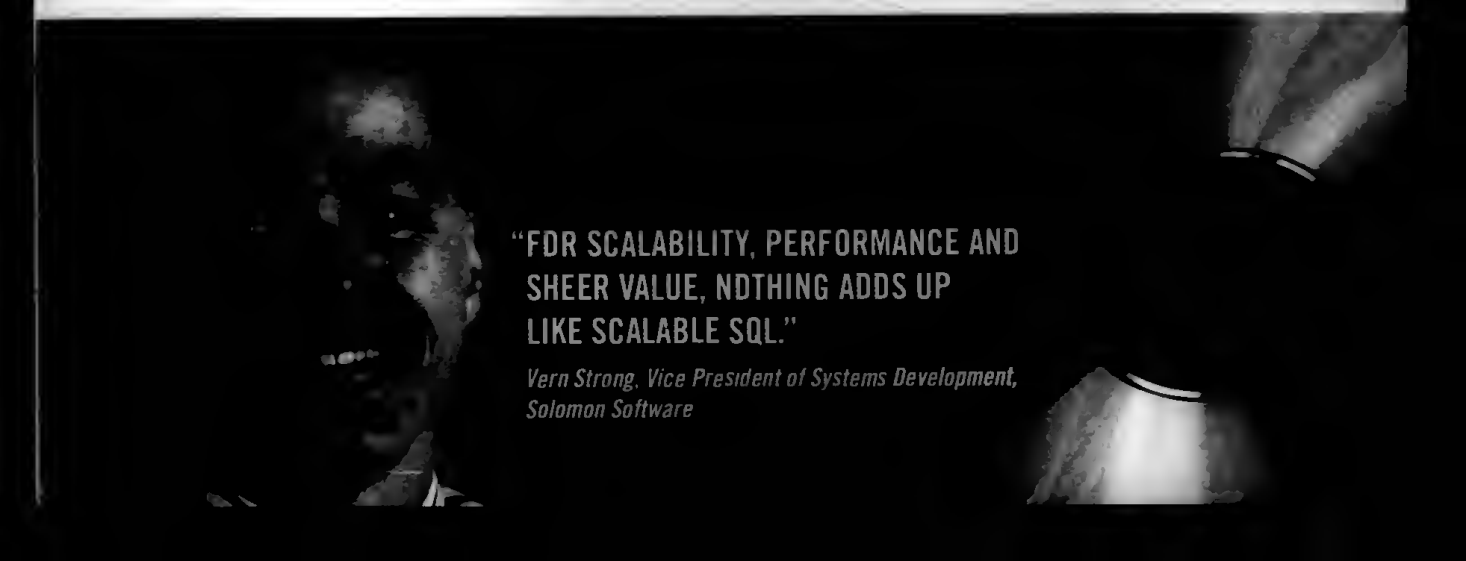
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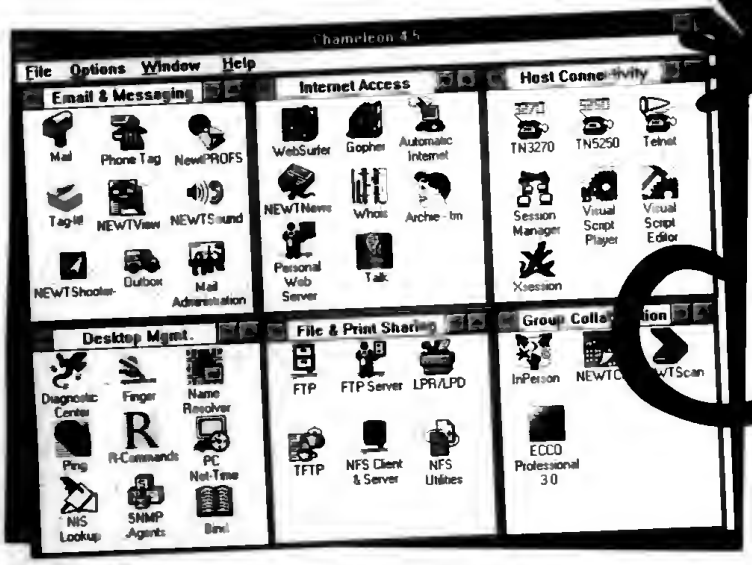
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Management

New Wave MANAGERS

Companies are creating exciting jobs in IS management — but those jobs aren't going to narrowly focused technologists. You need a broad range of skills to move up the new career ladder in IS.

By Rosemary Cafasso

When information systems and business executives create new IS management jobs these days — and that is not an everyday occurrence — chances are good they are looking for a generalist with a broad range of technical and business skills.

Sure, there's still a demand for technical wizards with expertise in current hot technologies. Just take a look at the SAP R/3 marketplace and the feeding frenzy for experts in this client/server software. But many companies are also creating positions or recasting existing jobs to reflect the need for a wider range of skills.

The new management jobs in IS often have old-sounding titles, such as IS consultant or manager of financial systems. But don't be fooled. The skill set required is much more demanding than it used to be.

What it takes

Among the talents most in demand: skills in customer relationship management, facilitation, communication, negotiation, vertical market expertise, basic business — such as understanding the monthly financial closing process — and the ability to track and understand technology trends.

"It's the rise of the business-oriented techno-dweeb," says David Whiteborn-Umphres, a consultant at CSC Consulting and Systems Integration in Waltham, Mass.

Executives and industry analysts say the new jobs reflect at least two significant trends. First is the overall corporate move toward generalists, who adapt more easily to rapid change. Second is the increasing pressure on IS to deliver the so-called "value add" beyond technical skills. In fact, some executives and analysts say a too-narrowly defined technical talent could limit an IS professional's career.

"We are moving toward flatter organizations," says Rouja Brzozowski, program manager at Interpersonal Technology Group, Inc. in New York. "What is emerging in IS is fewer levels, broader sets of skills, wide responsibilities and more flexibility."

Some companies have such a critical need for a wide range of skills that they are more than willing to give jobs to non-IS professionals if they can't find the right candidate in IS. Other companies have found new roles for veterans who have skills that were honed in mainframe environments.

"It's a tougher job these days," says Jack Rockart, director of the Center for Information Systems Research at MIT's Sloan School of Management. "The primary issue is to understand the business and the customer."

What follows is a brief sampling of some of the new jobs that have cropped up.

New Wave managers, *page 108*



Andy Goodwin

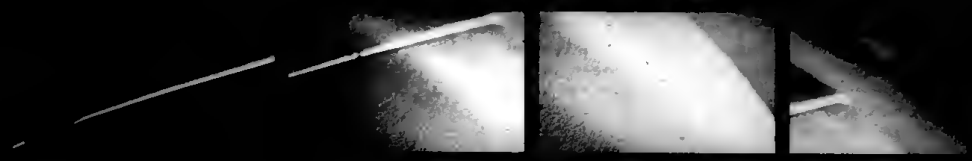
Diane Schwarz says her work experience, particularly as a consultant at Ernst & Young, sharpened her listening, negotiating and communicating skills. And those skills have been critical to her getting her job done at Steelcase, an office furniture manufacturer.



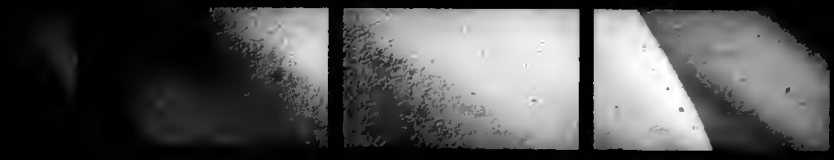
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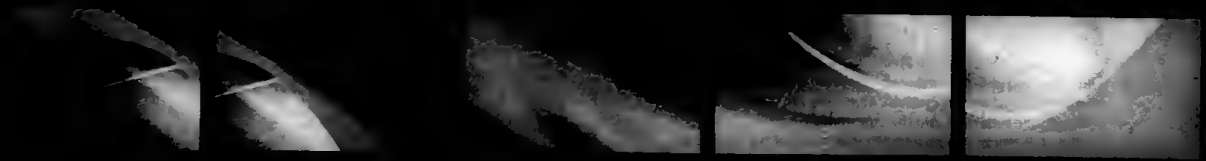
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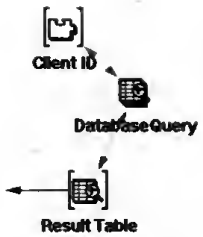


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Samuel Lewin of Cigna Systems, a financial services firm, advises IS professionals to be flexible and not focus too much on one technical area. "I see kids coming out of school who are excellent programmers, but they lack the ability to understand business and technology changes."

Continued from page 105

Speaking everyone's language

Diane Schwarz
Manager of financial systems, Steelcase, Inc.

When Steelcase, Inc. needed an executive to head up a key process improvement and systems implementation effort in its finance department, the company created a new position — manager of financial systems. But the executive team didn't pick someone from IS for the job. They couldn't find the right blend of skills.

Instead, this office furniture manufacturer in Grand Rapids, Mich., recruited Diane Schwarz. A former consultant then working at Nestlé, Inc., Schwarz was technical enough to understand the IS component of the project. But she could also "talk my language," says Mark Mossing, the assistant corporate controller and Schwarz's manager.

Steelcase needed "someone to manage the white space between us and IS," Mossing says. "This role facilitates communications between two functional areas, and she's done an outstanding job . . . I think she would be qualified for a CIO-type role in the future."

Schwarz manages the overall project, essentially synthesizing the IS and finance department components. Since joining Steelcase last year, Schwarz has helped the project team reduce the finance department's monthly close from an ordeal of more than two weeks to a 4½-day cycle. Part of this is the result of new client/server financial software Steelcase is installing. But it is also the result of basic business sense. "Some of the stuff being done at closing didn't need to be done then," Schwarz says.

Schwarz credits her combination of an engineering degree and an MBA with helping her balance the technical and business sides of the project. But it is her work experience, particularly as a consultant at Ernst & Young, that she says sharpened her listening, negotiating and communicating skills. And those skills have been critical to her getting her job done at Steelcase.

Marrying old skills with new needs

Samuel Lewin
Vice president of distributed services, Cigna Systems

When Michael Natan, senior vice president of Cigna Corp.'s Cigna Systems in Philadelphia, created a vice president of distributed services job last year, he could have shopped around for a client/server whiz kid.

Instead, Natan wanted a seasoned veteran who could meld a knowledge of client/server platforms with the disciplines of the old mainframe world. So he gave the job to Samuel Lewin, who has 25 years of IS experience — more than half of which was logged at Cigna.

Since coming on board in April, Lewin has launched new procedures and policies to bring discipline to the operation. One example: an executive on-call policy in which Lewin and other top-ranking managers are available to the help desk 24 hours a day on rotating shifts.

Lewin says it was his background in host-based computing, operations and LAN management that made him suited to the job. And he says good old-fashioned community involvement has helped him develop the solid communication and motivation skills that are also critical in his job.

As the head of a service organization, Lewin has the opportunity to talk with dissatisfied users. Working on community boards and even serving as a swimming club vice president have helped sharpen the necessary leadership skills, he says.

"It's the leadership training you get and the ability to stand up in front of people and answer very difficult questions without getting flustered," Lewin says. "That certainly helps when you are in a job like this.

"To me, it was the next step to round out my skills. I've done the programming, the new technologies," he says. "This is customer service and working with more lines of business."

George Trudel was one of the few IS veterans to be hired as an internal IS consultant at Blue Cross Blue Shield of Rhode Island. William Boffi, vice president of information and administrative services, says he was "looking for people who could interpret the current and future needs of the corporation and had some background in technology."

Career advice for New Wave managers

"The really important thing is the customer relationships. You can't outsource this."
— John Parkinson, partner, Center for Technology Enablement, Ernst & Young, Dallas

"It's key to have good analytical and process skills."
— Samuel Lewin, vice president of distributed services, Cigna Systems, Philadelphia

"You have to have people who are extremely flexible and willing to accept lots of change."
— Michael Natan, senior vice president, Cigna Systems, Philadelphia

"Go out and get educated on the fundamentals of what it takes to run the business."
— Diane Schwarz, manager of financial systems, Steelcase, Grand Rapids, Mich.

"More than anything else, continue to improve your business skills."
— Jack Spurgeon, vice president of IS, Eastman Chemical, Kingsport, Tenn.

"Go beyond a single platform. You need consulting skills."
— George Trudel, IS consultant, Blue Cross/Blue Shield of Rhode Island, Providence

"Make sure you understand general technologies and trends."
— Roula Brzozowski, consultant, Interpersonal Technology Group, New York

Flexibility counts

George Trudel
IS consultant, Blue Cross/Blue Shield of Rhode Island

Last year Blue Cross/Blue Shield of Rhode Island in Providence set up a group called the Business and Technology (BTO) office as part of its IS group. The BTO consists of several consultants who work with user departments to match needs with overall corporate goals.

But only a few BTO consultants came from the IS ranks. The others were hired from user departments. William Boffi, vice president of information and administrative services at Blue Cross/Blue Shield and creator of the BTO, says he was "looking for people who could interpret the current and future needs of the corporation and had some background in technology."

George Trudel is one of the BTO consultants who was chosen from IS. He is an IS veteran with years of programming and applications support experience behind him. But he says he got this job because of "the combination of [understanding] technology and skills like project management and understanding the business."

Trudel and his colleagues solicit feedback from users on systems needs. They then prioritize the requests according to corporate goals and budget issues and recommend an action plan. The job requires plenty of flexibility: Trudel can be a team leader, team member or adviser on any number of projects simultaneously.

Trudel is working on a corporatewide effort to put together a plan for the year 2000 and its impact on legacy systems. He is also chairman of a project to establish technology standards for the insurance company.

Trudel says one of his key success factors is his ability to converse with people instead of talking at them. A requirement for his job? "To not assume you have the right answer immediately," he says.

For more than a decade, Trudel has worked a second job in the evenings as a consultant to small businesses. He also has volunteered his time to a local high school to help it select computers. This after-hours work, he says, helps him fine-tune the listening skills that are so critical to his job. ■

Cafasso is a freelance writer in Walpole, Mass.

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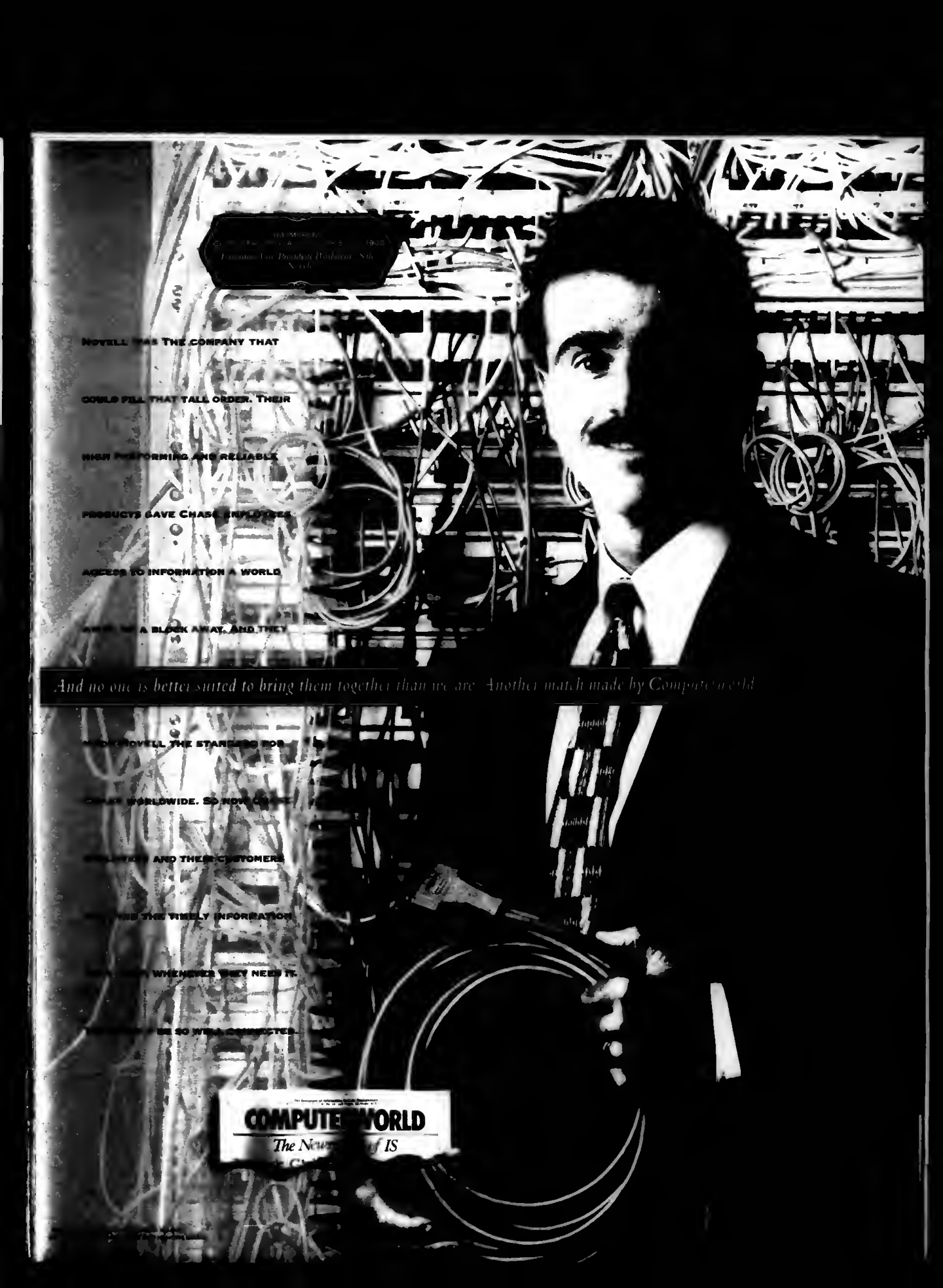
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**University of Texas Center of Research on Information Systems, Datamation, June 15, 1994*



In the information market, this much is clear: Vendors make the products. IS managers make the decisions.




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Practical Internet Sites for IS Managers

By Leslie Goff

Locating Internet sites with practical value for information systems managers is like trying to find contact lenses on a confetti-littered floor: They're out there, hut finding them often isn't worth sifting through the dehris.

Any site can be a hit-and-miss proposition. Some have tempting links that end up being pages "under construction" with no content. Sometimes you can access a site one day and get a "URL not found" message the next. Companies frequently publicize their sites hefore they're actually accessihle or have any content of substance.

However, the following sites have emerged as useful to IS managers. They are, hy and large, information repositories of IS-related information, with a handful of IS professional organizations and publications thrown in for good measure.

A Business Researcher's Interests Home Page

Sponsored by the Association for Information Systems
http://www.pitt.edu/malhotra/interest.html

Need some research such as "The Learning Organization and Information Technology" to support your proposal for new IS training? Perhaps you could use a case study, such as "Business Re-engineering at Cigna Corp. Experiences and Lessons Learned From the First Five Years" to back up your ideas about a new project

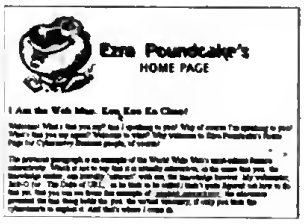


The site is thoughtfully presented and comprehensive in its scope. It offers 22 topic areas — including IS management research, organizational learning and jobs, careers and resumes — available at the click of a button on a graphical navigation map. Each button takes you to an index of articles and papers where you can access abstracts and full text.

CIO Magazine Home Page

Sponsored by *CIO Magazine*
http://www.cio.com

IS managers should check out this site because of the sense of IS community it creates The site acknowledges that most IS managers still aren't on the 'net and offers guidance and lessons learned (*CIO*, like *Computerworld*, is published hy International Data Group)



For example. Want to know if other companies and IS managers are using the 'net? Check out *CIO*'s survey results. Then hop to one of two *CIO* seminars "Overview of the World Wide Web" and "Critical Success factors for Using the Web." Wondering what knowledge other computer professionals are gleaning from the 'net? Check out the Discovery link, which jumps you to a list of "What We Learned Today on the Web." And Ezra Poundcake, pseudo-CIO columnist, has his own home page link here ("I am the Web-Man, Koo-KooKaCho!" he proclaims at the top) that isn't particularly useful hut adds to the overall experience nf feeling like you just walked into a private salon for IS managers.

AISG (Applied Information Systems Group)

Maintained by Trinity College, Dublin
http://www.cs.tcd.ie/www/dalgeo/aisg/is_inf.html/

The key valne of this site, which provides links to a variety of computer-related subject indexes, is its link to Information Resources on the 'net, a listing of international electronic IS discussion groups and open forums.

Site visitors can find information on business process redesign, computer-aided software engneering, executive information systems and ethics in computing Other links will take you to the World Wide Web Virtual Library and InfoSys Junction, an archival site listing papers, university computing departments, IS organizations and other information.

The SIM Home Page

Sponsored by the Society for Information Management (SIM)
http://www.simnet.org

This home page is a good site if you're considering joining SIM and are curious about its membership benefits. Also available is information on conferences, working papers, learning forums, members and other aspects of the organization. It's an indispensable site if you're already a member.

SimNet, a private on-line service of sorts at the site, lets members communicate with one another, hold electronic discussions and access the full text of working papers and other SIM publications.

David D. Lattanze Center Home Page

Sponsored by the David D. Lattanze Center, Loyola University, Baltimore
http://ignatious.lattanze.loyola.edu/lattanze/index.html

The David D. Lattanze Center for Executive Studies in Information Systems has a forum for executives and academics to swap ideas about IS management and technology issues. This site is a repository of IS-related working papers and research the center funds based on the needs and requests of its members.



Examples include: "Customer Support Programs: The Key for Creating and Retaining Satisfied Customers" and "An Examination of Gender Effects on Career Success of Information Systems Employees."

The tone here is sometimes bookish, hnt the information is practical. The 55-plus member companies include Johns Hopkins Hospital, Black & Decker Corp., SIM, Westinghonse Electronic Corp., several computer and consulting firms and state government agencies. Information about how to join the center and its activities is also available here. ■

Goff is a freelance writer in New York.



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Calendar

Nov. 28 - Dec. 6

MANAGEMENT

IT and Business Outsourcing: The Strategic Deal. Orlando, Fla., **Dec. 4-5** — Sessions include "Minimizing the Outsourcing Solution's Impact on Users," "Addressing the People Issue," "Playing Flat, Creating the New Horizontal Organization," "Understanding the Economics of an Outsourcing Proposal," "New Products, New Players and New Deal Structures" and "Outsourcing in Transition: A New Business Model." Fees: conference only, $995. "The Consultants and Lawyers Tell All," $495, "Measuring and Benchmarking IT Performance," $495. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880.

Sales and Marketing Systems for the 21st Century. Scottsdale, Ariz., **Dec. 4-5** — Focus: the latest advances in sales automation and marketing systems, with special emphasis on information sharing between field systems and headquarters. Keynote by William H. Davidson, professor of management and organization at the University of Southern California School of Business and co-author with Stan Davis of *2020 Vision*. Contact: Decision Support and Technology, Inc., Cambridge, Mass. (617) 354-6400.

INDUSTRIES

Cause '95. New Orleans, **Nov. 28-Dec. 1** — For information systems professionals in higher education. Topics include: extending legacy applications to the new enterprise architecture; client/server architecture for mainstream administrative systems and sustaining and supporting mainstream use of instructional technology. Fees: Cause members, $430; nonmembers, $630. Contact: Cause Professional Development, Boulder, Colo. (303) 939-0315.

Information 2000. San Antonio, **Dec. 3-6** — Theme: "Project Fusion: The Power Of Seamless Integration." Targeted at IS professionals in the health care industry. Topics include: collaboration vs. competition; community health information networks — what communities are doing; information sharing along the health care information highway; health care electronic data interchange opportunities; and strategies. Fees: Healthcare Financial Management Association and Center for Healthcare Information Management members, $695; nonmembers, $795. Contact: Healthcare Financial Management Educational Foundation, Chicago, Ill. (800) 252-4362.

USER GROUPS

TeleForum. San Diego, **Nov. 30-Dec. 1** — Focus is on giving resellers information and training to develop mission-critical applications using Teleform, Cardiff Software, Inc.'s forms processing software. Contact: Cardiff Software, Carlsbad, Calif. (619) 931-4500.

TECHNOLOGIES

DV/95 CD-ROM Expo. New York, **Nov. 28-30** — Contact: DV/CD-ROM Conference & Expo, Dedham, Mass. Fax: (617) 440-0359.

Faxworld '95. San Francisco, **Nov. 29-Dec. 1** — Focus is on helping information systems and communications professionals who are using or implementing fax-integrated messaging technologies in their organizations. Keynotes by Chris Roeckl, executive editor of *Communications Week*, on "A Vision of an Integrated Communications Strategy," and Mark Skapinker, president of Delrina Corp., on "The Future of Fax Software." Fee: $995. Contact: Customer Service at BIS Strategic Decisions, Norwell, Mass. (800) 874-9980.

Calendar announcements should be submitted at least six weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

SEND ANNOUNCEMENTS TO:

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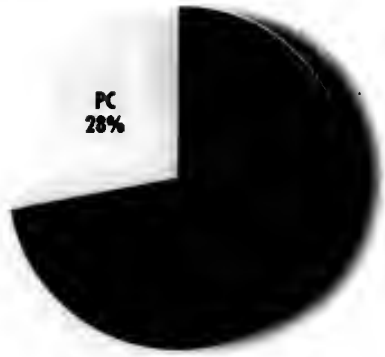
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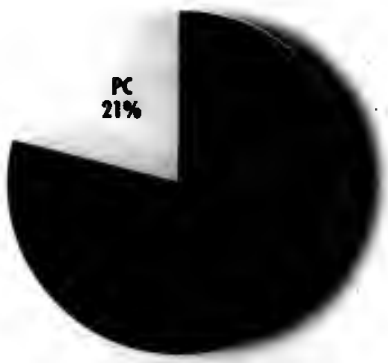
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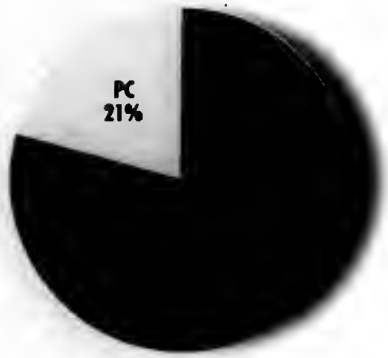
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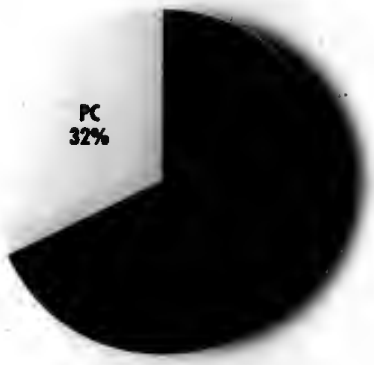
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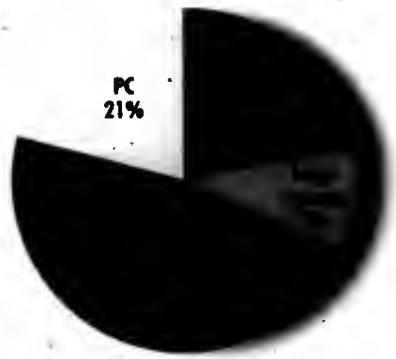
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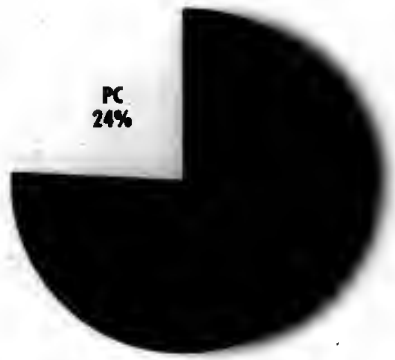
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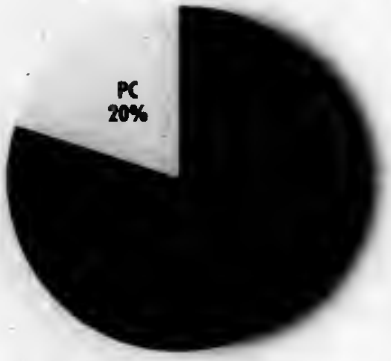
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The Newspaper of IS

Executive Track



Bergen Brunswick Corp. in Orange, Calif., the largest American supplier of pharmaceuticals to the managed-care market, has announced that former executive vice president and chief information officer **Denny Steele** has been appointed president of the company's new subsidiary, IntePlex, Inc. In his new role, Steele will oversee the integration of Bergen's product lines and information services to integrated health care market customers. **Linda Burkett**, who previously served as Bergen's vice president of information resources support services, will replace Steele. She joined Bergen in 1969 and has been instrumental in moving systems and staff to new technologies including client/server, databases and networks.

Trans Financial, Inc. in Bowling Green, Ky., has announced the appointment of **John K. Davis**, 35, to the newly created post of senior vice president and CIO. He will be responsible for systems architecture, process improvement and quality assurance. Prior to the appointment, Davis was director of strategic architecture at SmithKline Beecham Laboratories in Philadelphia.





CSX Technology, Inc. in Jacksonville, Fla., has announced the appointment of **Alan P. Blumenfeld** as vice president of application services. He will be responsible for all software development, training and assistance for affiliate CSX Transportation, Inc., a railroad company, and its parent, CSX Corp. He will oversee a staff of approximately 300 in Jacksonville and Baltimore. Prior to his appointment, Blumenfeld was manager of global quality, process re-engineering and information management at GE Medical Systems, a unit of General Electric Co.



Cognex Corp. in Natick, Mass., a leading supplier of machine vision systems, has announced the appointment of **Samuel A. Schneider** as director of information systems. He reports to John J. Rogers Jr., chief financial officer and vice president of finance and administration.

Schneider will be responsible for Cognex's corporate computer systems, including networking, telecommunications, manufacturing resource planning, financial and order administration systems. Prior to the appointment, Schneider was director of IS for a subsidiary of the Tufts Associated Health Plans and an independent consultant. Prior to that, he served as director of management information systems at Proteon, Inc.

Inacom Corp. in Omaha has announced the appointment of **Jeffrey A. Hartigan** as vice president of IS and CIO. His responsibilities will include internal information systems and information services products, including the Vision 2000/Visual Solutions on-line order-management and configuration system.

Hartigan has 30 years of experience in the IS field. Prior to the appointment, he was vice president of technology and support services at Northern Telecom Corp. and managing director, advanced technology and information engineering services at The Sabre Group of AMR Corp.

John Storck has been named director of the management systems/management information systems program at **Boston University's School of Management.** Storck has been a faculty member since 1992.

"Typically, when we had an important event coming up, we would rely on ... a mailing to our own database as the prime vehicle for getting the information to the people we had targeted.

This time, with our Enterprise Application Development & Executive Strategy Conference, we knew we had to have a marketing approach that would jumpstart awareness for the conference and educate the audience on Hewlett-Packard's Enterprise Application Development Program. We really felt we needed to create our own publication. A piece tailored to deliver information of real value to the customer. That, if they're building a business-critical application, the best platforms for their development are the HP 9000 Workstations and Servers.

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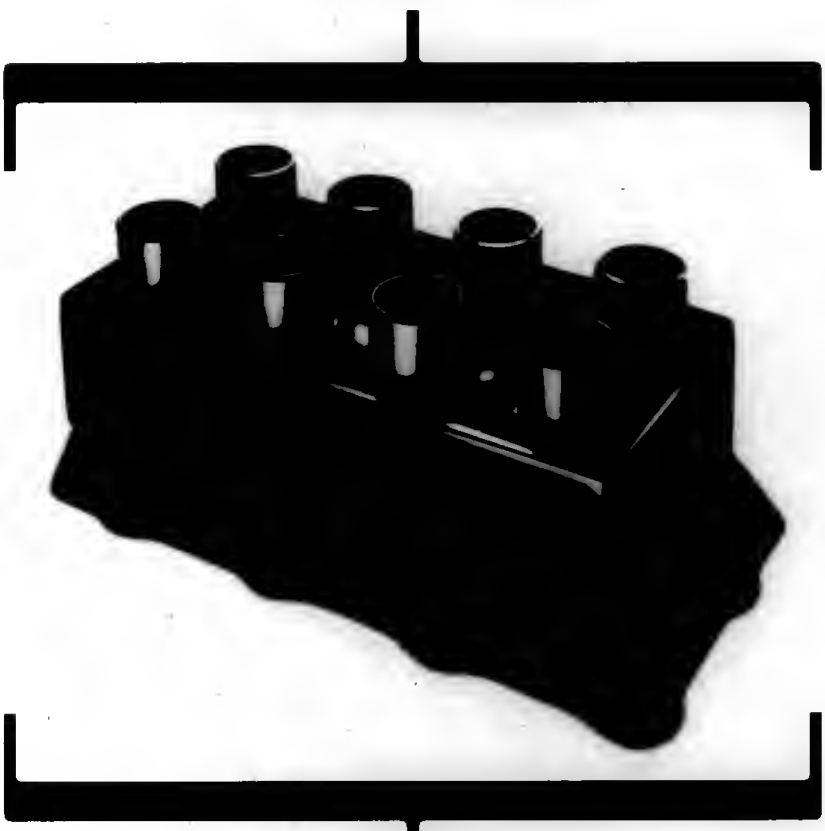
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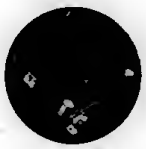
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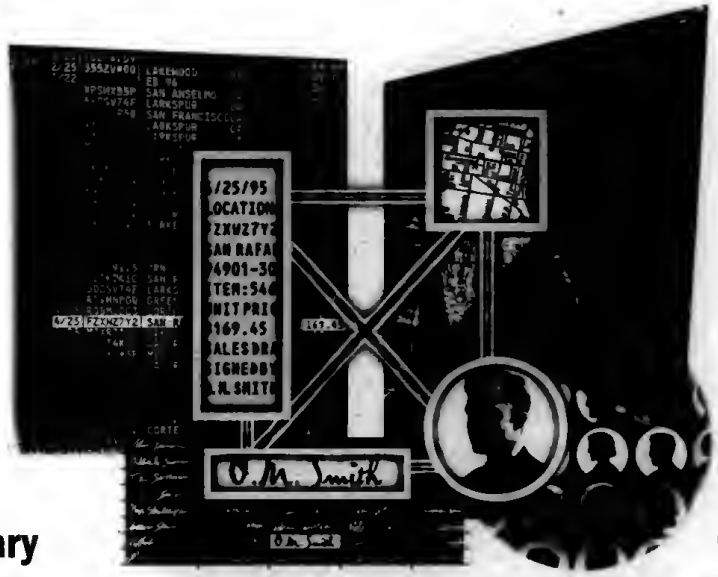
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The CW Guide to Object-Oriented DBMSs

So WHAT the HELL is OODBMS?

OODBMS is simply a short way of saying object-oriented database management system. Those objects typically are unstructured data elements, such as images or maps, that contain data and their own processing code.



Glossary

SMALLTALK: The object-oriented language developed at Xerox Parc. Smalltalk and C++ are commonly used in object-oriented development.

RELATIONAL: The most common form of database system used today. Stores data in structured rows and columns.

OOP: (object-oriented programming): A development method that lets programmers build applications using modules of code and data elements.

WHAT'S INSIDE

Top object-oriented database vendors are stepping up to market challenges. PAGE 129

Some users are tickled by OODBMS capabilities, but others are miffed about the learning curve. BUYERS' SATISFACTION SCORECARD, PAGE 130

By Alan Radding

OBJECT-ORIENTED DATABASE MANAGEMENT SYSTEMS ARE COMING, BUT DON'T THROW OUT YOUR RELATIONAL DATABASES JUST YET.

Object-oriented DBMSs store complex data and relationships among the data elements directly in a database instead of trying to map the information to relational rows and columns. Object-oriented DBMSs have gained many of the mainstream, industrial-strength features, such as multiuser access control, that organizations need in their production databases. But they remain suited mainly for a narrow range of applications that involve complicated data and many relationships. And without the type of abstraction layer that SQL provides to relational databases, the use of object-oriented DBMSs will remain limited to those organizations prepared to program the databases directly in an object language such as C++ or Smalltalk. OODBMS, *page 124*

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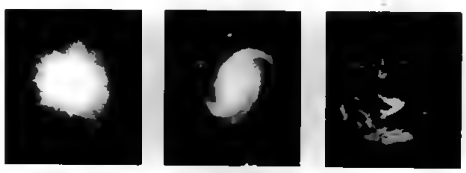
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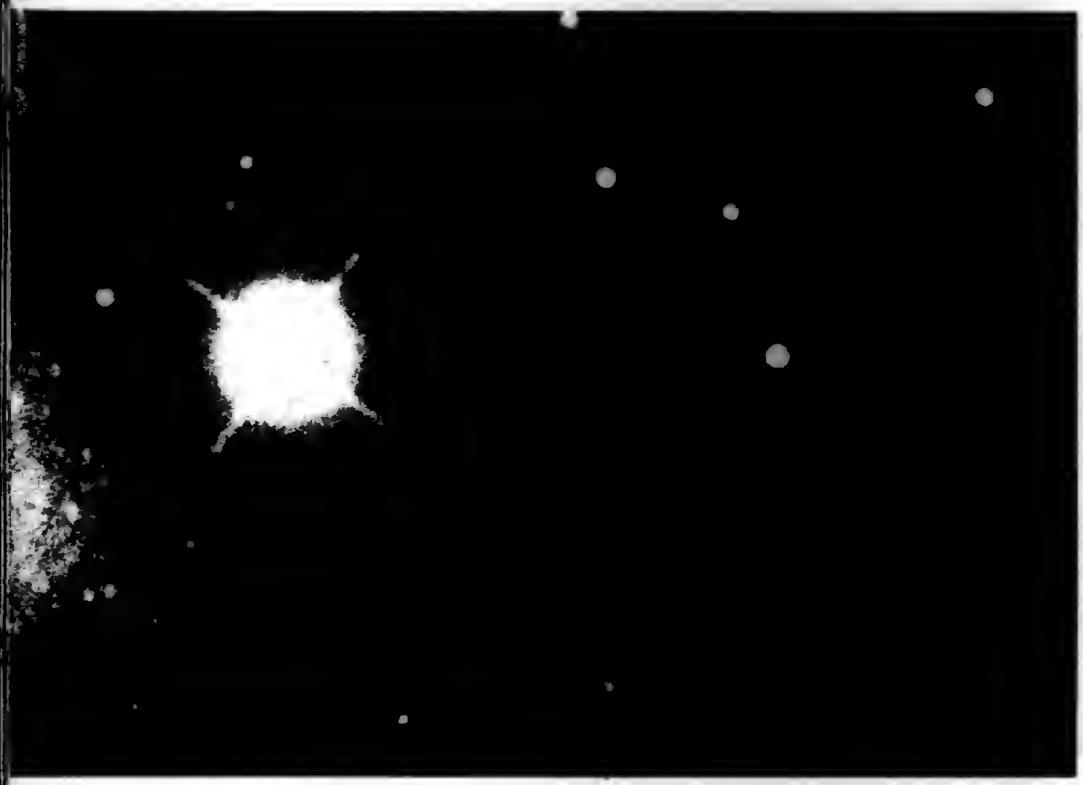


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So WHAT the HELL is OODBMS?

CONTINUED FROM PAGE 121

"Object databases are moving into the business world, but they aren't replacing existing databases wholesale," asserts Mitchell Kramer, consulting editor at Patricia Seybold Group in Boston. "They are best used with applications that must handle very complex data," or data that doesn't naturally lend itself to representation in the rows and columns of a relational database, he says.

Image data certainly lends itself to an object-oriented DBMS, but other types of data also benefit from this type of database. "[Computer-aided design] has been the primary application of object databases, but they are also used in telecommunications, financial services, health care and manufacturing process control," says Elizabeth Barnett, a vice president at Giga Information Group in Westport, Conn.

LEADING VENDORS

The leading object-oriented DBMS vendors include Object Design, Inc. in Burlington, Mass.; Gemstone Systems, Inc. in Beaverton, Ore.; O2 Technology, Inc. in Palo Alto, Calif.; Objectivity, Inc. in Mountain View, Calif.; Versant Object Technology Corp. in Menlo Park, Calif.; and Ontos, Inc. in Lowell, Mass. But even relational DBMS vendors such as Informix Software, Inc. and Oracle Corp. are getting into the act by adding object-oriented DBMS features to their relational products. This usually takes the form of support for undifferentiated binary large objects (Blobs). Blobs, however, don't provide the performance of a true object-oriented database. Also, a group of hybrid relational/object-oriented DBMSs has emerged to bridge the gap between the two database worlds (see story at right).

Until recently, however, object-oriented DBMSs lacked many of the basic industrial-strength features considered necessary for business production use. These include locking, which prevents two users from changing the same data simultaneously; or rollback, which restores a database to its original state if a transaction is interrupted in midstream.

Still, it's been difficult to convince corporate information systems staff that object-oriented DBMSs are indispensable. Few companies will talk publicly about their use of this technology because they are afraid to compromise their competitive advantage, notes Steve McClure, an analyst at International Data Corp. (IDC) in Framingham, Mass. However, the following provides a look at what a few companies in varied industries are doing and the challenges they face.

DERIVATIVES TRAINING

Problem: Derivatives are complicated investment instruments that are concocted quickly in response to a sudden opportunity or an investor's need for a particular mix of return and risk. They are entwined in highly complex relationships and have been difficult to model using conventional RDBMS technology. As a result, investment companies have missed opportunities while they struggle to establish systems to support these esoteric but critical investment instruments.

Chemical Bank Corp. turned to object-oriented programming in 1988. But the lack of an effective object-oriented DBMS proved frustrating. "We knew about the benefits of object databases, but there had never been a really solid one available," recalls Dante DeWitt, vice president of emerging market derivatives at Chemical Bank in New York.



Solution: Last year, DeWitt's group found Object Design's ObjectStore, the leading object-oriented DBMS. "We now think that the benefits outweigh the problems," he says.

Benefits: The product's ability to handle complex relationships, for one. "Because of all these relationships, there are lots of ways to view the business. An object database makes it easy to view the data in a number of ways without having to write highly complex queries for each view," DeWitt says.

The flexibility of objects and object-oriented DBMSs make them ideal for derivatives. "We can use objects that look the same, but they can mutate because things change over time," DeWitt explains. Change, by contrast, proved troublesome with an RDBMS. "With a relational database table, we'd have to leave all kinds of flags and keep changing the schema to do the same sort of thing," he adds. Even then, changing the relational database schema creates backward-compatibility problems.

These technical problems disappear with an object-oriented DBMS. "The database is aware of class hierarchy, so there is one schema, one business and one business model," DeWitt explains.

TELECOMMUNICATIONS

Problem: "In telecommunications, you have a lot of engineering parameters that influence business decisions," notes Sam Cinquegrani, president of Objectware Corp., a Chicago-based systems integrator that builds object-oriented database applications for Ameritech Advanced Data Services. Each decision is the end result of a series of very complex relationships.

For example, the provisioning system organizes and sets up the necessary telecommunications equipment and capabilities in response to customer service requests. It must balance business and technical considerations.

Solution: Initially, provisioning systems were built on RDBMSs, "but we couldn't put a lot of decision-making capabilities into the system," Cinquegrani recalls. In an object-oriented DBMS, the decision-making capability is built in to the relationships. The provisioning system knows what switches, lines, equipment and capabilities are necessary to set up a given service.

Benefits: Setting up service requests for new lines of equipment used to take days. With an object-oriented DBMS, setup has been reduced to hours in many cases. The database uses object inheritance to capture all the relationships that affect the decision.

Ameritech opted for Versant's Versant ODBMS after extensive bench-

OODBMS, *page 129*

Object aches

Managers overseeing object-oriented DBMS projects said "finding expertise" and "identifying benefits" pose the greatest challenges.

(66 users polled; multiple answers allowed)

Building/finding in-house expertise	32%
Quantifying management and users of the benefits	21%
Understanding how the technology can help the company	21%
Managing overly optimistic expectations	15%
Finding consulting expertise	14%

Source: CW Survey

Hybrids

THE ABILITY TO FIT INTO THE EXISTING INFORMATION TECHNOLOGY OR MANAGEMENT INFOR-mation systems infrastructure will be essential to the acceptance and success of object database technology in the commercial domain, says Steve McClure, an analyst at IDC and author of the report "Object Database Management Systems." Hybrid databases attempt to do just that by bridging the gap between the relational and object-oriented database worlds.

Hybrids take any of several approaches, ranging from middleware to a true relational database with an object front end. Leading hybrid vendors include Persistence Software, Inc., UniSQL Software, Inc., Illustra, Inc. and Hewlett-Packard Co. with its Odapter product. Hybrids are used at Shell Exploration and Production Technology Co. in Houston. Shell turned to Persistence so it could use its legacy data with object-oriented C++ applications. "The application thinks it is interacting with an object database," explains Lance LaPlante, software architect at Shell. The use of Persistence, which is middleware and not a database, allows Shell to leverage its investment in relational data stored in its Oracle database and its skills in relational systems. Before the company adopted Persistence, it maintained its relational systems and its object-oriented applications separately. The object applications stored their data in their own proprietary file system. The hybrid technology, however, "allows us to build object applications that co-exist with our relational systems," LaPlante says.

Another user, RWD Technologies, Inc., a systems integrator in Columbia, Md., turned to Illustra, an RDBMS that incorporates objects through extensions to a SQL. "Illustra allows us to leverage knowledge of SQL to manipulate spatial data and images," explains Wayne Elias, principal systems engineer at RWD. The company used Illustra in an application it created for a major package delivery company. The application included elements of geographic information systems and couner route data. "Using SQL, we can determine the shortest route," Elias explains. Illustra supplements SQL capabilities with what it calls data blades to provide plug-in support for specific data types and functions. "We can do searches and matches based on some piece of the content of an image," Elias says. Illustra was used in conjunction with a Sybase, Inc. database.

—Alan Radding

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Country (Other than U.S.) / Telephone

Fax / email

B. My Company's Primary Business Activity: (Circle one only)

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2 Computer Dealer/Retailer
3 Computer Manufacturing
4 Office Products Dealer
5 Service Provider
6 Software Developer
7 Systems Integrator
8 VAR
9 Distributor
10 Other (specify)_____

CORPORATE BUYER (End User)
11 Aerospace
12 Education
13 Financial Services: Banking, Insurance, Investment
14 Medical/Healthcare
15 Manufacturing: Non-Computer
16 Military/Government/Defense
17 Publishing/Broadcast/Media
18 Telecommunications: Carrier, BOC, Telco
19 Transportation
20 Utility
21 Wholesale/Retail: Non-Computer
22 Other (specify)_____

C. Your Job Function: (Circle one only)
23 Corporate Owner/Officer
24 Administration/Financial Management
25 Consultant
26 MIS/IS Management
27 Data/Telecommunications Management
28 Network Operations Staff
29 Sales/Marketing
30 Customer Services
31 Engineer
32 Analyst
33 Other (specify)_____

D. Product/Technology Interest:
34 Bridges/Routers/Gateways/Hubs
35 Broadband Equipment Services
36 LAN/Interoperability
37 ISDN
38 SMDS/Frame Relay
39 ATM
40 Integrated Voice/Data Equipment/Services
41 Global Services
42 Messaging — Voice eMail
43 Network Management Systems
44 Satellite Equipment Services
45 Wireless Communications
46 Internet/access/applications/security

E. Number of Employees in Your Company: (All locations)
47 Less Than 100
48 100-499
49 500-999
50 1,000-4,999
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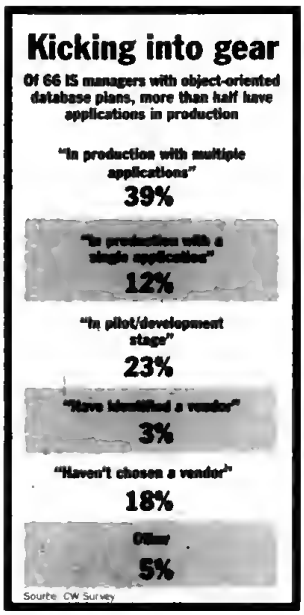
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So WHAT the HELL is OODBMS?

CONTINUED FROM PAGE 124



mark tests involving Gemstone's Gemstone and Object Design's ObjectStore. "We eliminated ObjectStore because it didn't have a Smalltalk interface," Cinquegrani says.

HEALTH CARE

Problem: "We get all kinds of information about our patients from all kinds of providers. We need to put it where we can get to all of it," says Ken Lawonn, vice president of IS at Lutheran Health Systems in Fargo, N.D. The information takes many forms: voice, video, digital images, conventional data and more.

Solution: "We could have stored all this data in a big relational database with multimedia capabilities, but we wanted to do more than just store it," Lawonn explains. The health care company wanted to build functionality in to the database so that actions would be taken based on the stored information. It developed an object-oriented model for health care in which functionality was inherent in each object. The firm opted for the Gemstone object-oriented DBMS.

Benefits: The system isn't deployed yet, but the company expects it to improve the quality and speed of health care delivery by giving doctors and nurses the relevant information about a patient, regardless of the source of the information or the type of data employed. ■

Radding is a freelance writer in Newton, Mass.

Hurdles await database vendors

By Elizabeth Barnett

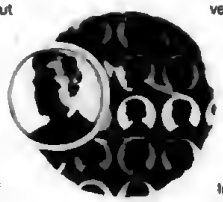
THE OBJECT-ORIENTED DBMS MARKET CONTINUES TO GAIN MIND SHARE AND MARKET SHARE FOR MAINSTREAM IS developers. Developers committed to using object-oriented technologies are finding that mapping objects into a relational database forces redundant development efforts and sometimes severe performance penalties.

While object-oriented DBMSs offer the best performance and mapping services for object-oriented applications, they show weak support for the standard reporting and querying applications that leverage transactional data. A tactical, yet popular, alternative is to leverage the investment in relational DBMSs and use a third-party mapping tool to store objects in tables. Most serious object-oriented developers have discovered how difficult it is to build these maps themselves; they look to vendors to support and tune the runtime software.

Leading object-oriented DBMS vendors today face three challenges: overcoming the real and perceived risk of object-oriented DBMS products, competing against an installed base of RDBMS applications and development shops and supporting standard data access and reporting applications. The top players are differentiating their strategies and stepping up to these challenges:

■ **Gemstone Systems, Inc.** remains focused on the Smalltalk market and has customers who can demonstrate large-scale, mission-critical applications in production. Its best target is the committed Smalltalk shop that has recognized the weaknesses of mapping object-oriented applications to RDBMSs. To differentiate itself, Gemstone has positioned its product as an "application server" that allows an object-oriented environment to access legacy and RDBMS technologies.

■ **Object Design, Inc.** has led the object-oriented DBMS market with an estimated 33% share, but its optimism has outrun its current growth. The company recently announced layoffs to help it focus on profitability. That has shaken the object-oriented DBMS community because the weaknesses of the darling of this market seem to reflect on all vendors. Near-term product enhancements (a SQL client and an RDBMS gateway) and numerous independent software vendor partnerships will bolster the firm's position.



■ **Objectivity, Inc.** targets the C++ market and, of all the object-oriented DBMS vendors, is most interested in value-added reseller and independent software vendor partnerships. In some cases, Objectivity seems too enamored of its own technology and not as focused on market requirements. It offers a Smalltalk interface and C++ and Objectivity SQL++ options. But it isn't aggressively pursuing the Smalltalk market, which is a growth area in the commercial IS sector.

● **Ontos, Inc.** has traditionally focused on its object-oriented OBMS engine but is now emphasizing its Object Integration Services. By providing a mapping tool for C++ applications to store data seamlessly in standard RDBMSs, Ontos hopes to grab a part of the hot market now led by UniSQL Software, Inc., Persistence Software, Inc. and, to a lesser extent, VMark Software, Inc., Hewlett-Packard Co. and Rogue Wave, Inc. In the long term, as its customers realize the compromises they must make to maintain a mapping environment, Ontos should get pull-through with its object-oriented DBMS engine.

■ **Versant Object Technology Corp.** has a twofold strategy: offer a high-end object-oriented DBMS engine to telecommunications and network management customers and offer Smalltalk-based tools for more mainstream application development. This dual approach can broaden its installed base but will require more support and development resources. (Note: Versant's Smalltalk skills and new Argos product were co-developed with Mexico-based SI Miramar, Inc.)

The RDBMS vendors, led by Oracle Corp., Sybase, Inc. and Informix Software Inc., will offer persistent storage mechanisms for objects in future product releases. They will be hybrid environments that will, of course, integrate the RDBMS installed base. Many RDBMS users are waiting for these products instead of purchasing an incremental object-oriented DBMS, with the hope that their relational investment will evolve to support object-oriented applications.

The RDBMS solutions have yet to be proved; only object-oriented DBMSs can deliver the necessary performance and robust object models that many developers require. Those most at risk from RDBMS enhancements, however, are the mapping tool vendors that in the interim have provided the tactical solutions. ■

Barnett is a vice president at Giga Information Group, a consultancy in Westport, Conn.

For more information about object-oriented DBMSs

Object-oriented DBMS products used by IS managers interviewed for this CW Guide

MATISSE
ADB, Inc.
Cambridge, Mass.
(617) 354-4220

GEMSTONE
Gemstone Systems, Inc.
Beaverton, Ore.
(503) 629-8383

OPEN ODB
Hewlett-Packard Co.
Palo Alto, Calif.
(415) 752-0900

ODB II
ICL North America
Reston, Va.
(703) 648-3300

ILLUSTRA
Illustra Information Technologies, Inc.
Oakland, Calif.
(510) 652-8000

OBJECTSTORE
Object Design, Inc.
Burlington, Mass.
(617) 674-5000

OBJECTIVITY/DB
Objectivity, Inc.
Mountain View, Calif.
(415) 254-7100

ONTOS/DB
Ontos, Inc.
Lowell, Mass.
(508) 323-8000

O2 SYSTEM
O2 Technology, Inc.
Palo Alto, Calif.
(415) 842-7000

PERSISTENCE
Persistence Software, Inc.
San Mateo, Calif.
(415) 341-7733

POET
Poet Software Corp.
Santa Clara, Calif.
(408) 970-4640

UNISQL/X
UniSQL, Inc.
Austin, Texas
(512) 343-7297

VERSANT ODBMS
Versant Object Technology Corp.
Menlo Park, Calif.
(415) 329-7500

Internet newsgroups:

comp.databases
comp.databases.object

Ooh la la! OODBMSs woo users with reliability and speed

By Kevin Burden

OBJECT-ORIENTED DBMSs DON'T HAVE THE WIDESPREAD APPEAL OF THEIR RELATIONAL FOREFATHERS, BUT NOT BECAUSE THEY FAIL TO MEET USERS' NEEDS. COMPANIES THAT USE OBJECT-ORIENTED DBMSs SAY THEY ARE EXTREMELY reliable and fast (although speed decreases noticeably as users are added), and with the proper extensions, they mesh nicely with existing RDBMSs. On the downside, the object databases still must overcome some ease-of-use hurdles.

Computerworld adjusted its normal Buyers' Scorecard format for this customer satisfaction survey. First Market Research Corp. in Austin, Texas, was hired to survey users. In this instance, it set out to gauge satisfaction with the overall product category rather than with individual products.

The survey polled 66 managers who use one of 10 different object-oriented DBMSs packages or are still evaluating several vendors. The highest concentration of users fell under the following three products: Hewlett-Packard Co.'s Open ODB, Object Design, Inc.'s ObjectStore and Versant Object Technology Corp.'s Versant ODBMS.

Of those users who were able to rate their overall satisfaction with their object-oriented DBMS software, most awarded "good" or "very good" scores. "Considering everything [HP's Open ODB] delivers, it has met, even exceeded our expectations," says Duncan Heath, a staff engineer at CTA, Inc. in Fullerton, Calif. Many others felt the same way. They said object databases present certain hurdles, including a learning curve, but end up delivering what they promise — an effective means of storing the complex data types with which relational models fumble.

EASE OF USE

Ease-of-use findings show that object-oriented DBMSs aren't as easy to use as end users would like and probably even less easy for developers. Many respondents blamed their "average" grades on the learning curve. "It was some time before our developers could be called productive," says Mike Rodgers, senior business analyst at United Airlines in San Francisco.

Once developers get up to speed, object programming cuts development time considerably, says Don Poole, senior business analyst at Bankers Systems, Inc. in St. Cloud, Minn. "Once we started reusing our [objects], development really moved along," he says.

SPEED

Vendors are working to address the issue of speed, but the users surveyed didn't indicate it was a problem. Thirty users gave the products grades of "good" or "very good" when rating speed, making it the feature with which users are most satisfied.

"For database structures with inheritance mechanisms at work, there is nothing on the planet that can compete with the speed of an object database," says David Taylor, president of Enterprise Engines, Inc., a consultancy in San Mateo, Calif. RDBMSs rely on associated access, which is slow because it takes time to query individual tables, Taylor explains. "Object databases bring back the navigational access of hierarchy databases, a performance benefit relationals gave up," he says.

Scalability is a different story. Satisfaction with performance drops sharply as users are added. Managers were questioned about three concurrent user scenarios: 30 users, 30 to 99 users and more than 100 users. The number of users giving favorable grades dropped from 45% (with 30 users) to just 11% (with more than 100 users).

"As users went up, performance went in the opposite direction, along with our satisfaction," Poole says. But he says scalability steadily improves with each release of Poet Software Corp.'s Poet. "The [Microsoft Corp. Windows] NT version had substantial scalability improvements. It holds a much flatter performance curve as you scale," he says.

COMPATIBILITY

There seem to be few worries among users about compatibility with system software. Fourteen users gave the database products grades of "very good," the most for any category. Many who rated compatibility as "good" said the object-oriented DBMSs didn't conflict with existing system software. Even those users who rated the databases as "average" didn't complain of problems, just that it ran the way it's supposed to.

Compatibility with RDBMSs isn't as clear, although the feature still posted very positive marks. Users' success with hooking into RDBMSs largely depends on the extensions offered by their chosen object-oriented DBMS. Preston Phillips, assistant city auditor for the city of Scottsdale, Ariz., uses UniSQL. Inc.'s UniSQL/X, a unified object/relational DBMS that lets users read and update a collection of multivendor databases. "UniSQL has a good feel for this, and it easily meshed with our Sybase database," he says.



For others, integration was more of a chore. "We did some very special programming to get our RDBMSs to work," Lees says about Open ODB. HP designed Open ODB as a stand-alone database but does bundle it with a sister product called Odapter that lets developers create object applications with an integrated view of legacy relational systems.

RELIABILITY

Many users said reliability was a top concern and that their vendors have generally met their needs. "We're used to high reliability; we weren't ready to settle for anything less," says Rachel Lohr, information processing consultant at the University of Wisconsin. It turned out Lohr's worries were for nothing. "Reliability and data integrity [of Gemstone Systems, Inc.'s Gemstone] has been very good," she says. "We haven't seen one bug."

Lohr's experience appears to characterize the user majority. Twenty-five users said reliability was "good" or "very good." Satisfaction with data integrity, another question we asked, was even higher. Thirty-two users posted favorable grades, and 16 of them rated data integrity as "very good."

The one poor grade came from Poole, a user who distributes databases across multiple servers. Poole said distributing Poet caused serious problems, but he isn't sure where the fault lies. "I'm sure it's partly ours and partly theirs. I'm not sure where the line is drawn," he says. ■

Burden is *Computerworld*'s senior research-er. Firing Line/Scorecard.

BUYERS SATISFACTION SCORECARD

Overall satisfaction

VERY GOOD	GOOD	AVERAGE	POOR
6	27	17	0

Ease of use for users

VERY GOOD	6
GOOD	7
AVERAGE	27
POOR	0

Ease of use for developers

VERY GOOD	2
GOOD	9
AVERAGE	30
POOR	0

Compatibility with systems software

VERY GOOD	14
GOOD	10
AVERAGE	10
POOR	0

Compatibility with relational databases

VERY GOOD	7
GOOD	15
AVERAGE	21
POOR	3

Reliability

VERY GOOD	11
GOOD	14
AVERAGE	20
POOR	1

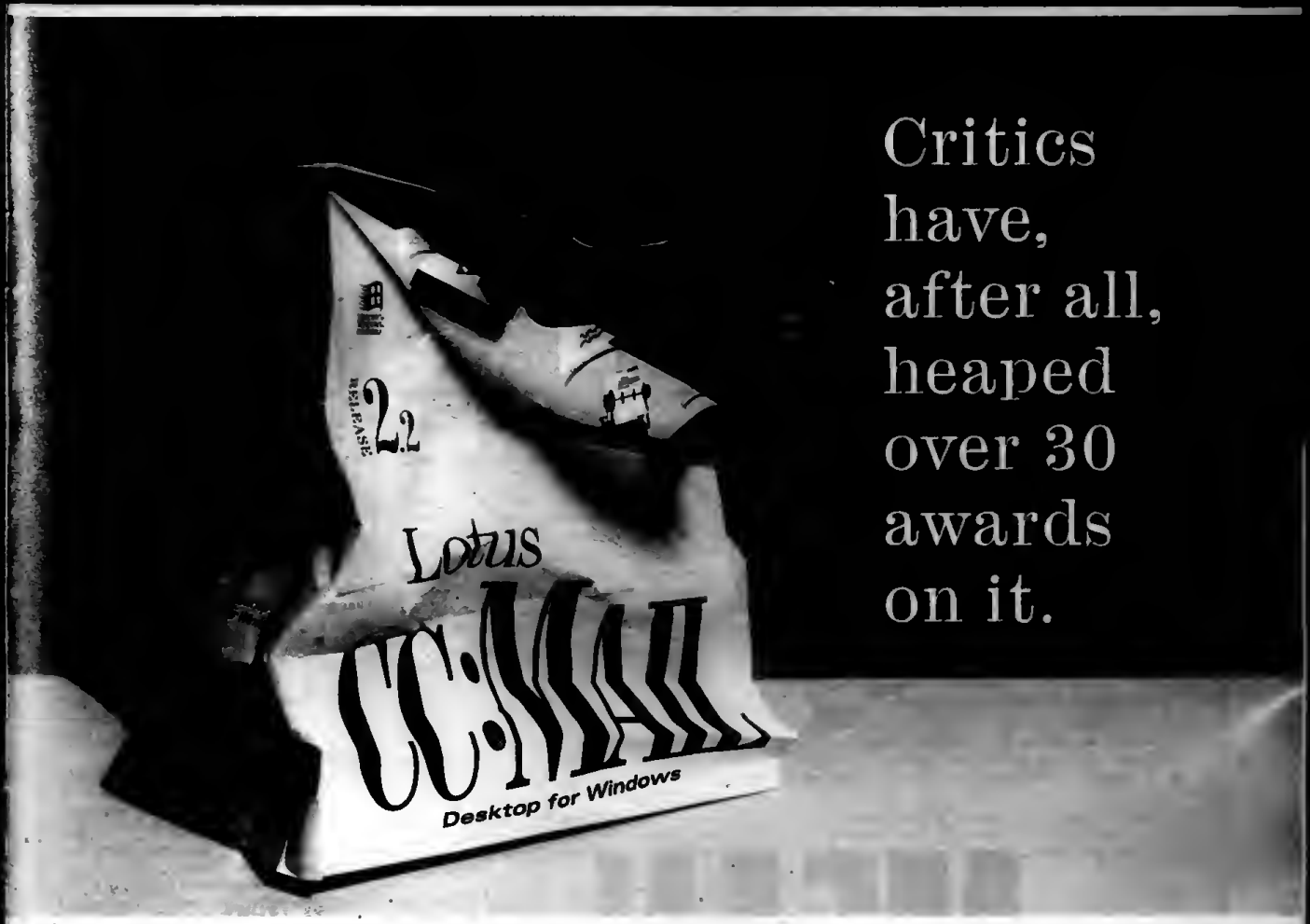
Speed

VERY GOOD	5
GOOD	25
AVERAGE	16
POOR	1

What We Did

Computerworld contracted with First Market Research to conduct user satisfaction surveys with a pool of object-oriented DBMS users. After several weeks of calling, 66 users of 10 different object-oriented DBMS products completed the survey. Fifty users had settled on one product; 16 were still evaluating products from several vendors.

(Number of users, based on interviews with 66 object-oriented DBMS users. The users not accounted for in each chart chose "Don't know.")

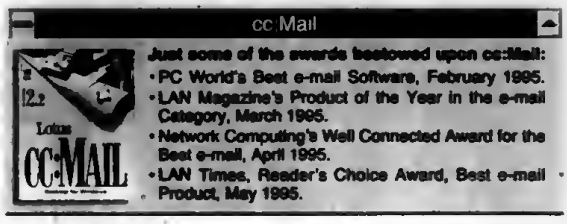


Critics have, after all, heaped over 30 awards on it.

From a strictly biased viewpoint, cc:Mail™ is the best, most proven, and the easiest to implement e-mail package in the world. But chances are, you'd appreciate a strictly unbiased viewpoint as well. In which case, we offer over 30 major awards won over the last two years by cc:Mail.

cc:Mail is not only a favorite of the critics, it's favored by users as well. With over 8 million users worldwide, it is the most popular e-mail package. cc:Mail is preferred by growing companies because it operates seamlessly across all platforms and works with the applications you're currently running. And it's scaleable, meeting the needs of companies with anywhere from 5 to 500,000 users. No wonder companies like Clorox and Oral-B feel comfortable relying on cc:Mail for their mission critical communication needs.

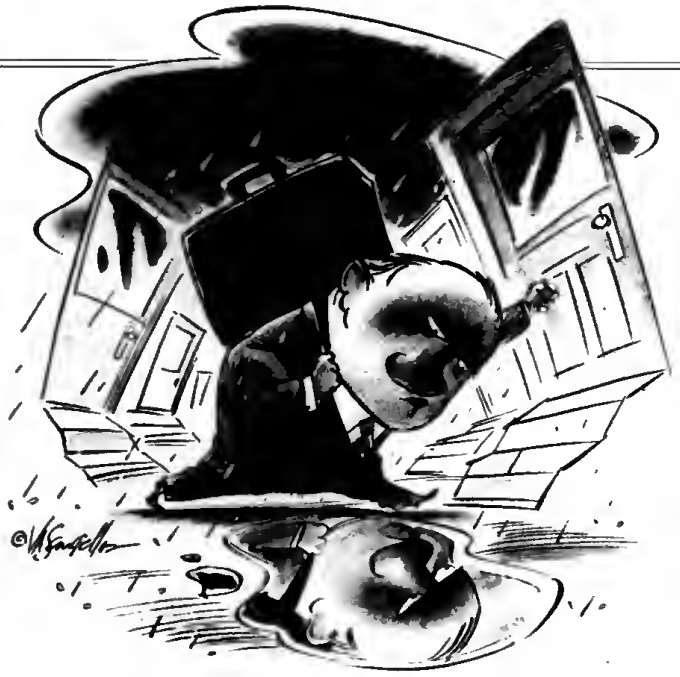
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MEAN STREETS

BY LARRY COOKE

When we last met, I was a fifty-something senior information systems consultant with 30 years' experience and fresh out of a job. In my story, "Over 40, and you're out," I told you how, after six years of working in IS for the same company, I found myself hitting the streets looking for work [CW, June 26].

While no younger, I am much wiser on the subject of job hunting, having been out there for the past five months competing.

I'm doing OK. I'm closing in on a job at which I think I'll be successful.

That doesn't mean the process of looking for work has been pleasurable. As a matter of fact, it has been downright humiliating at times.

In the beginning there was anger. Sure, at first I was mad as a hornet at my former employer. How could I be "let go?" But you know what? Being angry is draining and counterproductive. It makes you avoid reality, and you end up playing games all day on your PC or watching *Oprah*.

In retrospect, I must tip my hat to my former company; it did a couple of things for which I'm now grateful. I got a monetary settlement in exchange for not suing it for age discrimination. That meant I didn't have to worry about economic disaster for my family.

The company also offered the use of a professional outplacement service. Considering I hadn't substantively updated my resume in 10 years, I was thankful for the help to make me more marketable (see story, page 134).

On the road. Finally, though, I was on my own. I was on the interview circuit. But I didn't handle things all that well. At first I thought I had to explore every lead, no matter whether I was suited for, or wanted, the position.

More than half of the 30 interviews I went on in the first three months were with recruiters. Talk about useless. The majority had no technical knowledge. They acted as gatekeepers and paper pushers and insisted on my filling out complex forms. When they asked if my salary was "flexible," they, of course, meant "flexible down." What a waste of time. It was as if a job search was some sort of clerical task.

Now I won't deal with a firm that needs forms up front. Instead of chasing companies I didn't want to join and trotting out to see recruiters, I should have done research — sales growth, product offerings, IS managers' names — to zero in on those companies for which I actually wanted to work.

Things ain't what they used to be. If you're out there searching, be prepared for one shocking truth: Almost no one wants you because you see the big picture. They want you only because you are good at one hot technology or another. If you have experience with Powersoft Corp.'s PowerBuilder or Sybase, Inc.'s Sybase or SQL Server, you can write your own ticket.

This is a sorry state of affairs. The marketplace is currently in love with the mechanic and

In Depth

has forgotten the engineer. Mechanics repair things, they don't build them. That's why it's hard for IS pros, who see beyond a specific tool, to be taken seriously these days. That was often my problem in interviews. While I have four years of experience in PowerBuilder, Sybase and SQL Server, whenever I tried to relate the tools to the business problem, the technical interviewer lost interest.

For example, I was solicited to join a staff of 12 PowerBuilder developers to work on designing a major financial system. The selection criterion was one year's experience with PowerBuilder. Well, heaven help the company. Next year it will be back looking for another dozen people in the next hot technology and still have no system.

I've learned I don't want to work for a company in which I'm pumped only for my mechanic's skill. Part of my skill set is keeping the business context firmly in view and emphasizing business goals. This worked against me when I went for individual developer jobs, so I stopped looking for those positions.

I've met some lowlifes. I remember wanting to pull my hair out when I sat in on one interview for a developer position with a hotshot technical person. This person was quite full of himself. He assumed I couldn't know nearly as much as he did about technology because I had a lot of management experience. In his mind, managing equals sleazy.

Thirty-year IS veteran Larry Cooke found himself out of a job and interviewing like mad. He was shocked to find that much of his experience meant nothing.

He asked me how I would handle testing. His terminology centered on object wrappers, automated tools and reuse. Would I first build test objects, consult a class library, select a check-in/check-out facility or what? In his context, testing was done by running a particular program or grouping work into objects for reuse.

As I sat explaining that test cases were built in the design stage, I realized I was getting nowhere. In this hotshot's context, *there isn't any design stage*. There's only prototyping or rapid application development or something with a similar label. Whatever it was I did all those years couldn't possibly be relevant. We were speaking different languages.

When confronted with a hotshot, I've learned to use only examples drawn from DOS, Macintosh or Windows environments. That's the only context such an interviewer knows. Any discussion of mainframe methodology is dismissed as useless. These interviewers don't have a clue of the process I'm describing, so I appear backward.

I'm afraid the new orientation on the mechanic's skill is creating an industry of mercenaries. These hired guns are ready to move to the next opportunity when it's obvious that their efforts will never produce results or someone pays them 10% to 15% higher salaries because they happened to have memorized C++, Sybase or Microsoft Corp.'s Visual Basic.

Some companies are lost in the details. Another interesting interview took place at a large bank out of town. The interviewer was a per-diem consultant who went into a three-month contract 14 months before. He now oversees a dozen other contractors on a client/server project. He interviewed me because he was looking for two more senior developers to "finish the coding" faster than the users could change the specifications.

I suggested that he may have a management problem, not a technical one. He wasn't managing users or developing phased deliverables or maybe not even time boxing (the process of holding development time constant and varying the deliverable to fit the time). Needless to say, I didn't get the assignment.

The company may wake up some day to realize that, after more than a dozen man-years of effort, all it has is ever-expanding modules. Probably more than half the effort will be thrown away, with the rest packaged as "the system." It's possible that the whole effort will miss the mark and disappoint users. The company may also eventually become disenchanted with client/server technology altogether.

This company, by the way, outplaced most of its internal information technology staff two years ago. It now uses consultants almost exclusively on key projects. It doesn't appear to have much general management overseeing the effort, either. When the ax falls on this bunch, no problem; they are already mercenaries, used to the fortunes of war. The sad thing is that if properly managed, the technical people on that staff could turn out really great stuff. Too bad they'll be doing the great work for another company.

Keeping my chin up. Over the process of interviewing, of disappointments, of raised and dashed hopes, I've gotten better at the job seeking process. I've narrowed my focus. I've stopped competing for jobs that call only for feature memorization in new languages. I am focusing on environments in which my business experience and technical skill can be leveraged beyond what I can personally develop and install. I tout my management experience unashamedly, and if prospective buyers aren't

Mean utreets, *page 134*

Job hunting resources

BOOKS

Knock 'em Dead, The Ultimate Job Seeker's Handbook *by Martin Yate (Bob Adams, Inc., Holbrook, Mass., 1987-94). ISBN: 1-55850-287-4 (paperback).* Among other strengths, it lists 100 possibly embarrassing questions you may be asked and how you should respond.

The Seven Habits of Highly Effective People: Powerful Lessons in Personal Change *by Stephen R. Covey (Simon & Schuster, 1989). ISBN: 0-671-70863-5.* Bestseller that focuses on all areas of life, not just job hunting.

So, What's Your Point? How to be Persuasive *by James C. Wetherbe and M. Bond Wetherbe (Meade Publishing, Minneapolis, 1993). ISBN: 1-883096-00-6.* How to create win-win situations.

REFERENCE

Corporate Technical Directory, 10th Edition *(Comtech, Woburn Mass.). ISBN: 1-57114-008-5.* Locates companies by name, geography, industry and function. Gives brief overview of management, history, size and products. Also available in regional editions and on CD-ROM.

The Directory of Executive Recruiters *(Kennedy & Kennedy, Fitzwilliam, N.H., 1995). ISBN: 0-916654-92-3 (paperback).* Lists 2,800 recruiters by function, industry and location.

WEB JOB HUNTING

http://www.careerpath.com/
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http://occ.com//
On-Line Career Center

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Computerworld's on-line career page

http://www.monster.com
The Monster Board lists more than 3,500 positions

http://www.ajb.dni.us
America's Job Bank, with roughly 100,000 listings from 1,800 state employment agencies

INTERNET NEWSGROUPS

misc.jobs.misc; misc.jobs.offered.entry; misc.jobs.resumes; us.jobs.resumes; us.jobs.offered

BULLETIN BOARD SYSTEMS

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Mean streets

CONTINUED FROM PAGE 133

interested, well, you can't please everyone.

I'm willing to wait for a company that wants the skills that I have. I'll keep you posted.

I'd be interested in hearing your stories about life in the job hunting market and your thoughts on improving seasoned IS pros' job-seeking chances. Drop me a line at lhcooke@ibm.net. Write if you get work.

Coda: At press time, we got a nice call from Larry, who told us his job search had finally ended. He has accepted a position as a management consultant at a national consulting firm. ■

Resume revamp

The secret to my resume? Two words — white space.

Well, maybe four more: PowerBuilder, Sybase and SQL Server.

Before I got some professional help, I must confess, my resume was a snoozer. Chockablock full of information and experience, sure, but info packed wall to wall on two pages. Every possible thing that fit was on there. My development experience 15 years ago with Tandem Computer, Inc. machines? On there. My work writing compilers for IBM in 1965? On there, for paragraphs. Guaranteed to end up in the nearest wastebasket.

That's not to say those experiences weren't worthwhile. They're just not what's going to help sell me today.

I learned to turn my resume upside down. My old resume went start to finish describing my experience chronologically and thoroughly.

My new resume still starts with my most recent work, but instead of taking up half a page describing six years' worth of experience, I prioritized. For instance, for my last job, I mention the hot spots first — my work with PowerBuilder, Sybase and SQL Server; my expertise in business process redesign; and the mainframe-to-PC downsizing I'd done. I canned almost everything else.

On my resume, I go only into the last three jobs in any depth (just a couple of paragraphs each). My career experience pre-1982 — remember, I've been in IS 30 years — has either been boiled down into one- or two-sentence decriptions (that's where the summaries of my minicomputer and mainframe development skills are) or it was left out. It's cold and cruel, but interviewers don't care what you did 15 or more years ago. You've got to let it go!

What I have today is a two-page killer resume with lots of white space and lots of impact — enough to land me 25 solid company interviews in the past three months. — *Larry Cooke* ■

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You may nominate ONE page. Please send your nomination electronically to contest@cw.com or fax it to Lory Dix at (508) 875-8931.

2:24 PM
10,000-page run under way.

2:25 PM
Printer speaks to you in strange new language.

ERuppp ERuppp ERuppp ER

2:26 PM
Call service supplier and try not to panic.

5:16 PM
Service guy finally arrives.

5:59 PM
Can't help, he says, it's a network thing.

6:00 PM
Panic. Visualize IBM printers to calm down.

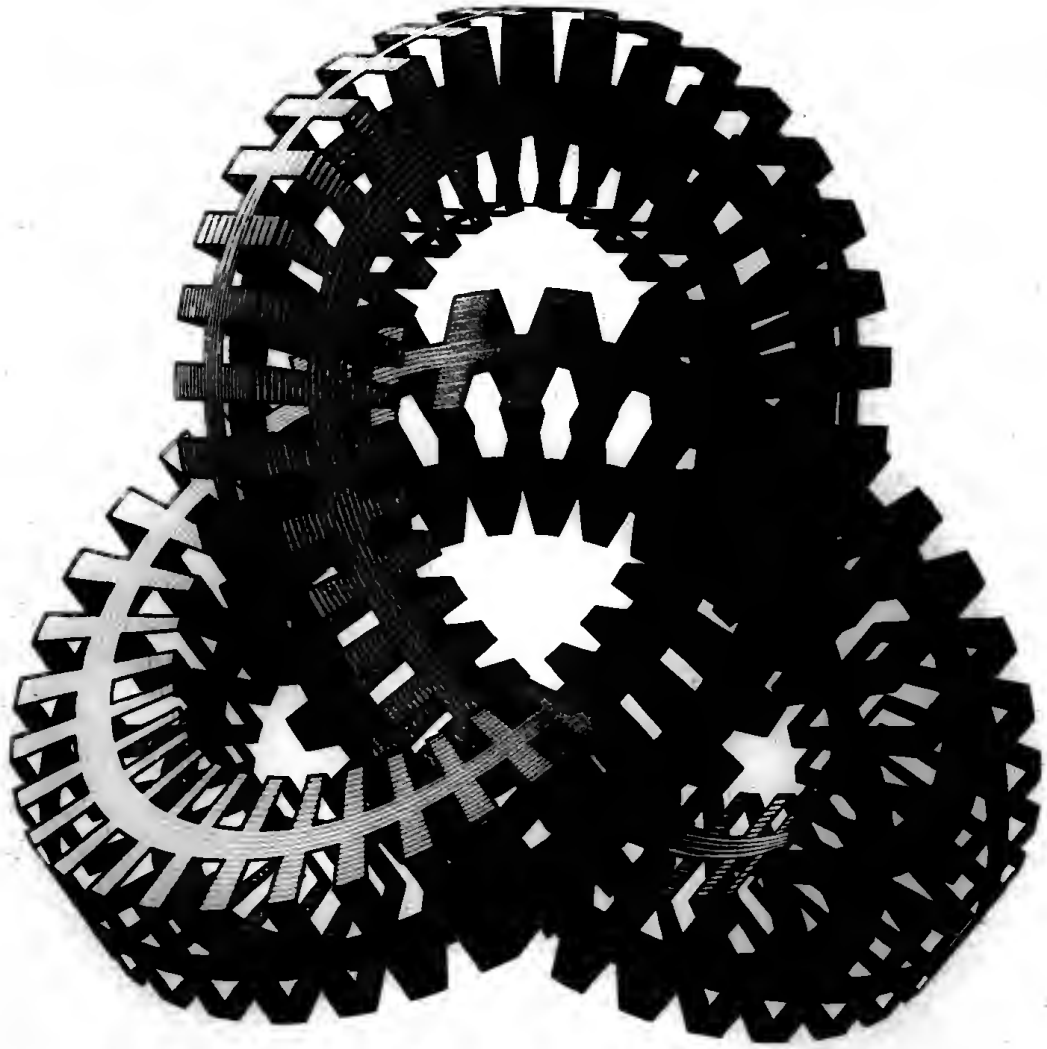


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"Just recently we hired 65 professionals from 510 responses generated by just one recruitment advertisement in Computerworld. With a qualified hit rate of 80%, Computerworld advertising generates enough responses to keep nine full-time recruiters busy."

With some 40,000 employees worldwide and revenues totaling over $13 billion annually, MCI Communications Corp. has established itself as the nation's second-largest long-distance provider and one of the world's largest communications companies. The company's recent alliance with British Telecom further enhances its position to supply a vast array of telecommunication products and services to the global community. To ensure MCI's competitive edge in the communications marketplace both now and in the 21st Century, Recruiting Manager Don Desjardins advertises in Computerworld to recruit the best IS talent.

"The recent release of networkMCI BUSINESS and internetMCI are just two examples of the sophisticated, seamless communications products our software engineers are continually developing and introducing. Building world-class systems and products requires world-class Information Systems talent. In the networkMCI Services and Engineering groups, our culture demands that we employ only the best. It's this top talent we find and hire by advertising in Computerworld.

"In my mind, Computerworld is one of the best multi-platform, leading-edge information systems publications going. It covers every aspect of the IS world, and its readers are IS professionals with a variety of technical backgrounds. Since MCI's information technology group develops systems and products on a wide range of platforms, from open systems to large mainframes to the Internet, and recruits for extremely diverse technical environments, Computerworld is a perfect advertising fit. It is the industry-specific publication that targets all the top talent in all the right environments.

"Having just completed a three-year migration of our entire systems engineering group from Arlington, Virginia — one thing is certain: Computerworld recruitment advertising was a key element in successfully identifying and hiring qualified IS developers for Colorado Springs. Case in point, during 1994 our recruiters hired 1,124 technical professionals into systems engineering without paying a single agency fee. As a result, our cost-per-hire falls well below the industry average - thanks largely to our Computerworld recruitment advertising.

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Computer Careers

Turmoil brings opportunity in health care

Managed care, mergers create need for systems integration expertise

By Steve Alexander

Systems integration and design of hospital data-capture systems have emerged as the primary career opportunities in medical information systems, according to an annual survey of trends in that sector.

Recent hospital mergers, often the result of the cost-control pressures of managed care, have caused hospital IS to focus on integrating the dissimilar computer systems of combined facilities.

That is one finding in the annual "Trends in Healthcare Computing" survey conducted by the Healthcare Information and Management Systems Society (HIMSS) in Chicago and Hewlett-Packard Co.

Accordingly, hospital IS executives say, there are new career opportunities for IS professionals skilled in medical systems integration.

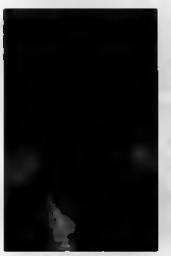
"Integrating systems across separate facilities is the key concern. It outweighed the computerized patient record, which last year was the big item," says Nancy Aldrich, president of both the HIMSS and Telecommunications Management Corp., a consultancy in Waltham, Mass.

"The focus on managed care and merging organizations has changed the IS person's focus. About 80% of the people who responded said their IS budgets are going up as much as 30%. It's because they know they've got to do managed care and integration," Aldrich says.

New opportunities

The survey also shows that medical IS departments are focusing more on collecting comparative data that will allow hospitals to measure their costs and patient outcomes against those of other hospitals. That is creating jobs for IS professionals who can design systems that capture hospital data in ways that will simplify comparisons.

At Memorial Sloan-Kettering Cancer Center in New York, Wei-Tih Cheng, vice president of IS, says IS is working with the medical staff to define critical comparative data and is beginning to design systems to collect it. The systems will measure health, financial and patient satisfaction outcomes, he says.



"Your ability to negotiate with managed care firms is improved if you're larger."

John Glaser,
Vice president and CIO, Partners HealthCare System

Boston-based Partners HealthCare System, which oversees Brigham & Women's Hospital and Massachusetts General Hospital in Boston and North Shore Health Systems in Salem, Mass., foresees a 25% budget increase next year to begin integrating the computer operations of the three facilities, says John Glaser, vice president and chief information officer.

"To some degree, this is driven by managed care. But it also is driven by the overall restructuring of the hospital market that says market share matters and that your ability to negotiate with managed care firms is improved if you're larger," Glaser says.

Glaser's response to the integration project includes creating a physical Fiber Distributed Data Interface/Asynchronous Transfer Mode network that will support TCP/IP and IPX among the hospitals. "We have not had to change our workforce to do this. We've been able to use our existing folks, although we've hired some outside consultants," he says.

James R. Wagner, chief information officer at the University of Iowa Hospitals and Clinics in Iowa City, says, "We need to have some way of sharing data among all of the facilities that might participate in the care of the patient, including the individual physician office, the ambulatory clinic and the inpatient facilities. There needs to be a seamless way to share that data as the patient moves from one location to another."

Wagner says he is looking at the Internet's World Wide Web as a potential vehicle and that his staff is focusing on the security implications of the Web.

As a result, Wagner says, the hospital is emphasizing IS networking specialties, such as Hypertext Markup Language. And more IS help-desk workers will be needed as employees with few computer skills are given workstations.

From a career standpoint, the consolidation of hospitals means fewer jobs for CIOs, Wagner says. But for the midlevel IS worker, the news is good. "I expect there will be more staff needed in the middle ranks because of the recognition that information is important in managing these complex health organizations," Wagner says. ■

Alexander is a freelance writer in Edina, Minn.

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By Daniel Lyons

Good grades for on-line education

Going back to school has a new twist for IS professionals

On-line education began as an alternative for people who didn't have the time or money to take traditional classroom-based courses — a sort of high-tech version of correspondence school.

But information systems professionals who have tried on-line courses say they received a better education over the Internet than they have in classroom-based courses — and for less money.

"If I were to compare the two, I'd say that I found the on-line course to be much more beneficial than the five-day classroom courses I've taken," says Jennifer Hogan, systems manager at the finance department of the Saskatchewan provincial government in Regina.

At your own pace

Hogan recently completed an eight-week course on Microsoft Corp. Windows NT offered through the Microsoft Online Institute (MOLI). It met twice a week in a chat room. Hogan says spreading out the meetings over two months gave her time to let information sink in.

"In a regular five-day course, you're just flying through the material so quickly that it's hard to grasp everything. There isn't a lot of time to ask questions. With the on-line course, I could go back and do the labs and the exercises and then come back and ask questions," she says.

Another plus, she says, was that meeting on-line is less intimidating than meeting in a classroom. "In a classroom setting, you can be afraid to ask questions for fear of looking dumb. In the on-line group, they can't see you, and you're less inhibited, so you tend to ask more questions."

Curt Raddatz, president of Odyssey Computer Services Corp., a consultancy in Willingboro, N.J., says he also likes the slower pace of the on-line courses. "With those five-day courses, you go in there for a week, and you walk out dizzy," he says.

Raddatz has taken on-line courses in Windows NT and Microsoft's Windows 95 through MOLI. He says the biggest plus was that he didn't need to take time away from work. "I'm a one-man organization, and I just can't possibly take time out to take a traditional class," he says. "First, there's the cost of the course, but also I lose 40 hours of billable time at about $50 an hour."

John Cushing, a software systems specialist at Digital Equipment Corp., also appreciated not having to miss work. "I could still fulfill my obligations to my team, and in the evening I could do my studying," he says.

Cushing, who works in a Colorado Springs support facility for Digital, acknowledges that on-line education may not be for everyone. "It depends on how structured you are. I'd say that for somebody who is reasonably disciplined and self-motivated, it's a really easy way to get information."

"The students really have to have good time management skills," says Jim Moore, an associate professor in computer science at Christopher Newport University in Newport News, Va. Moore teaches on-line courses through CNU Online, a new program at the university. Moore says his on-line students tend to be self-starters and get better grades than his classroom students.

Perhaps the most exciting facet of on-line courses is the other students, says Curt Buckley, president of Venture Labs, Inc. in Grand Rapids, Mich.

Buckley says he enjoyed sharing ideas with people from all over the world who were his "classmates" in a recent on-line course that he took from Virtual On-line University. "We had people from London, from all over," he says. "You can't do that in a regular classroom." ■

Lyons is a freelance writer in Ann Arbor, Mich.

Caught up in the Web

On-line education isn't just cheaper and more convenient — it's also more effective, says William Painter, president and founder of Virtual On-line University.

"It's hypertearning. It's webbed learning. It's nonlinear. Consider that when you pick up a book and start reading, in an hour the amount of information you've taken in depends solely on how quickly you can read. But if you start on the Web, in an hour you may have moved across a variety of subject areas."

Painter, former chairman of the department of education at Stevens College in Columbia, Mo., founded Virtual On-line University in April 1994. The university's curriculum includes a range of liberal arts classes and courses in computer science. Students use a combination of electronic mail, Web searching and chat rooms.

"Through most of history, before the printing press, people learned by making links between pieces of information," Painter says. Learning on the Web, he says, is actually a more natural paradigm. "It's more learner-directed."

—Daniel Lyons

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Heeding the call of the wild

The Southwest is booming, but IS career opportunities are uneven

By Leslie Goff

In the Southwest, the desert is hot, the salsa is hot, and the economic growth is hot. But job opportunities for information systems professionals can be tepid.

Phoenix and Tucson, Ariz.; Albuquerque, N.M.; and Las Vegas are outpacing most other U.S. cities in growth, and each metropolitan area is embracing new industries by offering tax breaks and other economic incentives.

Of the four metropolitan areas, Las Vegas — which grew in population a whopping 26.2% from 1991 to 1994, making it the fastest-growing area in the U.S., according to the Census Bureau — is the region's weakest market for IS professionals. And Phoenix, where the population grows 3% to 4% each year, is the strongest.

By and large, public service organizations — from state, local and federal government agencies to universities and public school systems — still dominate the list of top employers in each of these areas (see charts, page 143). This has narrowed the selection of choice IS jobs in competitive private sectors.

Phoenix/Tucson

Together, Phoenix and Tucson account for more than 80% of Arizona's total employment, and unemployment rates in each area are lower than the statewide average of 6.3%. Each area is experiencing an economic transition; Phoenix is shifting from a tourism-based economy to become the hub of a major new manufacturing beltway, while Tucson is attracting new software, manufacturing and customer service operations as growth among the area's major defense and aerospace employers flattens.

As a result, population is increasing in both cities. The statewide labor force grew 7% last year, says Brent Fine, an analyst for research administration at the Arizona Department of Economic Security. Californians seeking less expensive housing, solid ground and less stressful lifestyles are the largest segment of the new population, he adds.

Phoenix offers some of the top IS jobs in the Southwest, with advanced manufacturing environments at high-tech leaders Motorola, Inc. and Intel Corp. Residents rave about quality-of-life features such as great weather and recreation, but they also caution that the city has a relatively high murder rate.



The Southwest's unique mix of climate, cultures and cuisine holds special charm, but IS careers opportunities vary in the region's major cities.

Motorola, the city's second-largest employer, has increased its IS staff 10% to 15% annually over the past two years, says Renee Lentz, director of marketing and logistics systems for Motorola Semiconductor Products Sector Information Systems. Lentz says that rate will persist as she actively recruits SAP and computer-aided software engineering programmers to integrate factory-floor and other critical applications enterprisewide.

Intel is slated to build a new plant in the area in the next two years, Fine says. Other high-tech companies such as Honeywell, Inc., US West, Inc. and AT&T Corp. and financial services firms such as American Express and Banc One Corp. are contributing to the area's changing business landscape.

In Tucson, there are more than 250 small- to medium-size software development companies, says Ben Buehler-Garcia, senior vice president of the Tucson Metropolitan Chamber of Commerce. Microsoft Corp. is set to open a customer support center there that is expected to be IS-intensive, he adds.

Albuquerque, N.M.

The Albuquerque economy is somewhere between "doing well and booming," says Marvin Gibson, manager of information technology at Intel in Rio Rancho, N.M. The facts bear out his assessment: At 4.7%, the area's unemploy-

Call of the wild, *page 143*

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CONTINUED FROM PAGE 142

ment rate is well below the statewide rate of 6.3%, and job opportunities for systems analysts are projected to grow, according to the New Mexico Department of Labor.

Historically, public sector, health care and military and defense organizations have dominated the area, but new industries are moving in, says Guy Dameron, an economist at the University of New Mexico Databank. High-tech manufacturing concerns such as Intel, Motorola and Philips Semiconductor are beefing up their presence in the area. Software developer Intuit, Inc. is also set to break ground for a customer service center.

Albuquerque has a legacy of high-tech research and application with Sandia National Laboratories, which has attracted other high-tech concerns, Gibson says.

"You have a lot of state-of-the-art technology here, and there is plenty of opportunity to support very large-scale shop-floor control systems, automated materials handling and factory robotics," Gibson says.

Las Vegas

The job rate in the world's gaming capital is keeping pace with the population growth, gaining 6.6% from September 1994 to September 1995. The job market, however, is driven by the casinos, "and you don't see a lot of organizations, like ours, with large enterprisewide systems, so there isn't a lot of competition for IS people here," says Rosalina Rios, deputy director of IS for Clark County, the area's fourth-largest employer. "The casinos are more into midrange systems."

Rios says she has to do very little replacement hiring and can't recall losing a staffer to another job in the area. "When people have left, it has been for personal reasons, like they were moving or they received an internal promotion. We have a lot of stability here," she says.

Four new casinos breaking ground in Las Vegas could help change the IS landscape because they will be building new systems from scratch, says Mike Clarke, an economist at the Nevada Department of Employment, Training and Rehabilitation's information processing and development division. ■

Goff is a freelance writer in New York.

NEW MEXICO

Employment by occupation (2005*)

Systems analyst	Statewide	Albuquerque
1993 employment:	2,520	1,290
2005 employment:	5,280	3,040
Job growth:	+109.5%	+135.7%
Total annual openings:	250	150
Computer programmer		
1993 employment:	2,270	970
2005 employment:	2,660	1,390
Job growth:	+17.2%	+43.3%
Total annual openings:	90	60
Computer programmer aid**		
1993 employment:	630	300
2005 employment:	720	370
Job growth:	+14.29%	+23.33%
Total annual openings:		

*Estimates **Junior systems analyst/entry level

Top 5 employers: Albuquerque

University of New Mexico
Albuquerque Public Schools
Sandia National Laboratories
City of Albuquerque
Kirtland Air Force Base

Source: New Mexico Department of Labor

ARIZONA

Employment (1994)

	Statewide	Phoenix	Tucson
Labor force:	1.99 million	1.27 million	393,000
Employment:	1.86 million	1.20 million	367,000
Unemployment rate:	6.5%	5%	6.5%

Computer-related occupations, statewide*

Systems analyst:	4,970
Computer programmers:	6,270
Computer programmer aids:**	1,360

*Data annually revised estimates **Junior systems analyst

Sources: Arizona Department of Economic Security, Research Administration

Top 5 employers: Tucson

University of Arizona
State of Arizona
Hughes Missile Systems
Health Partners of Southern Arizona
Magma Copper Co.

Ranked by the number of full-time employees in Arizona

Source: Tucson Metropolitan Chamber of Commerce

Top 5 employers: Phoenix

State of Arizona
Motorola, Inc.
City of Phoenix
Maricopa County
Samaritan Health System

Source: The Phoenix Business Journal's Corporate Affairs

NEVADA

Employment by occupation (1994/1998*)

Systems analyst	Statewide	Clark County
Total jobs 1994:	1,290	630
Total jobs 1998:	1,600	900
Average annual growth rate:	+7.5%	+9.1%
Computer programmer		
Total jobs 1994:	1,180	600
Total jobs 1998:	1,360	820
Average annual growth rate:	+3.5%	+6.6%
Computer programmer aid**		
Total jobs 1994:	300	220
Total jobs 1998:	400	300
Average annual growth rate:	+7.4%	+8.2%

*Figures are preliminary estimates only and are subject to change
**Junior systems analyst/entry level

Top 5 employers: Las Vegas

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MGM Hotel & Casino
The Mirage Hotel & Casino
Clark County
University of Nevada at Las Vegas

Source: Employment Security Division, Nevada Department of Employment, Training and Rehabilitation

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Northwestern Memorial Hospital, one of the nation's most prestigious academic medical centers, has a variety of positions available on multiple teams. Our IS Division is growing in tandem with the construction of a new $580 million facility, and the development of a cutting edge system that will set the health care industry IS standard. We are seeking key Analysts with expertise in the following:

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- Microsoft Office Suite, workstation technology
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TECHNICAL ANALYSTS
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Northwestern Memorial Hospital is located in the heart of Downtown Chicago between the Magnificent Mile and beautiful Lake Michigan. You'll enjoy an impressive salary/benefits package and a progressive work environment focused on "Building for Tomorrow." Send your resume to: Karen Johnson, Northwestern Memorial Hospital, 310 E. Huron, Chicago, IL 60611. FAX: (312) 908-9288. An EEO/AA Employer.

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Mainframe Applications Development

Minimum of 2 years experience in one or more of the following: COBOL, MVS, EDI, CICS, Relational Database.

Client Server Applications Development

Minimum of 2 years with experience in one or more of the following: Visual Basic, C, C++, Uniface, PowerBuilder, Windows, UNIX, EDI, Relational Database (Sybase, ORACLE).

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As a Telecommunications Systems Analyst, you will be responsible for the analysis, design and implementation of a broad range of voice communications services. Successful candidates will be experienced telecommunications professionals with a strong background in PBX administration and support, with a proven background in managing large, complex projects. Our multi-locations telecommunications environment consists of the following: AT&T Definity G3 PBXs, AT&T ACD/CMS, AT&T Audix.

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Must have a minimum of 2 years experience of the following: Testing and deploying client/server applications on a HPIux operating system environment, relational database (Sybase/ORACLE), 24 hours support in a mission critical real-time environment, leadership skills.

Software Communication Analyst

Must have a minimum of 2 years experience of the following: FTP, TCP/IP, LAN, WAN, UNIX and Network Management, GUI development.

As a stable, billion dollar industry leader, we offer a competitive salary, relocation package, and excellent benefits. Plus our Green Bay, Wisconsin location provides a low cost of living, relaxing surroundings, a variety of outdoor activities, stress-free commutes and a friendly, family environment. For consideration, please send, fax or e-mail your resume (indicating desired position) with salary history to: **Schneider National, Inc., Human Resources Dept., CW-11/6-CL, P.O. Box 2545, Green Bay, WI 54306. Fax: 414-592-3252. E-mail: snlcorp@jwtworks.com** Equal Opportunity Employer M/F/D/V.

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Systems Analyst to perform complete system analysis, design and implementation of an Electrical Components Database development using MS Access 2.0 as Front End and Sybase SQL server running on a VAX Platform as Back End database. Design using Sybase Open Client 10, ODBC, Access Basic Programming, Access Developers Toll Kit and Windows API, also using mail enabled platforms Novell 3.1x, The Wollongong Network and IBM mainframe Regs: Bachelor's degree in Comp. Science, Systems Analysis, Comp. Info Systems, Computer Engg, Electrical Engg, Electronic Engg, Mathematics or its foreign ed equiv. 1 yr exp in job offered or 1 yr exp in related occup as Programmer, Programmer Analyst, Systems Analyst, Software Engineer, Consultant, System Analyst/Network Administrator or Project Trainee; CAD/CAM. Must have some related experience including network administration, database design and using each of the following Client-Server Architecture, NOVELL Netware, MS Access 2.0, Sybase SQL Server, Powerbuilder, Access Basic, Windows API, ODBC, Access Developers Tool Kit and AutoCAD. $44,000/yr. 8a-5p, 40 hrs/wk. Send resume to: 7310 Woodward Ave., Rm 415, Detroit, MI 48202. Ref. #169695. "Employer Paid Ad"

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Software Engineer. Will design and develop high performance algorithms including channel equalization, echo cancellation, Trellis-Coded Modulation, Viterbi decoding, synchronization and timing recovery, speech coding and video coding for high speed modem and multimedia applications. Will design and develop different modulation and demodulation techniques including FSK, PSK, DPSK and QPSK for finite precision DSP chip for high speed modem applications. Will perform software design and implementation of these algorithms and communication protocols for computer communication based on real-time multitasking and object oriented programming techniques using the assembly language TMS320C30 Emulator, HP 16804 logic analyzer and TAS Telephone Emulator. Requires Master's degree in Software or Electrical Engineering. Also requires one year experience in the job to be performed or one year experience as a Research Associate. Education to include completion of one course in Digital Communications using FSK, PSK, DPSK, and QPSK modulation techniques, synchronization and timing recovery, one course in Detection and Estimation using Viterbi decoding, one course in Adaptive Digital Processing, one course in Communication Network for Computers. If experience in related field, entire experience must be in the development of adaptive filtering and equalization algorithms for mobile communication. Education to include completion of one year research or completion of a Master's thesis in the investigation of video coding including subband coding and vector quantization, reconstruction methods from signals with subbands loss and the implementation of video coding algorithms using C/C++ and object oriented programming. Hours: 9:00 a.m. - 5:00 p.m., 40 hours per week at $39,000 per year salary. Must have proof of legal authority to work permanently in the U.S. Please send two copies of resume to: Illinois Department of Employment Security, 401 S. State St. - 3 South, Chicago, IL 60605, ATTN: James Gregory, Ref. # V-IL 13655-Z. No Calls. An Equal Employer Paid Ad.

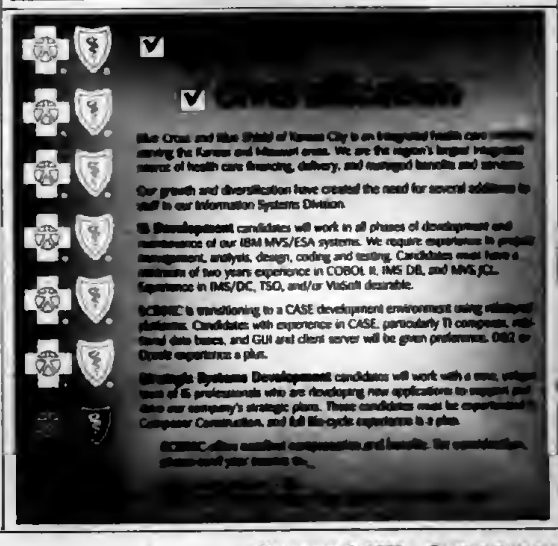
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Requirements include a minimum of 5 years of AS400 business application development experience (RPG/400) experience in PD/distributed applications, utilizing one or more of the following: SQL, PowerBuilder, Visual Basic, Visual Age, C++, Smalltalk, etc., strong business and analytical skills, experience within the securities/investment mutual fund industries, team player, excellent communication skills, experience with RDBMS (DB2/400, Oracle, Sybase, SQL Server, etc.) experience or familiarity with Object Oriented technology. Qualified candidates should submit a resume in confidence to:

Ellen Thurmond
Director of Human Resources
IT Department

STANDISH, AYER & WOOD, INC.
One Financial Center, Boston, MA 02111

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EEO/AA

SYSTEMS ANALYST Analyze design, develop, implement and support Transportation Cargo Management, Inventory Management and Financial Management systems under client-server environments using UNIX (HP-UX), MS-Windows (3.1) Sybase SQL Server Version 4.9 or above preferably System 10 (Transact SQL, APT DB Library 'C' interface, APT Library 'C' interface), Gupta SQL Windows Version 4.0 or above 'c' and CASE Tools. Provide on-site support including software modifications troubleshooting and recommend design optimization strategies for clients using VAX/VMS (VMS System Services, VAX Fortran, VAX VMS, VAX Cluster, VMS Internals), Sybase, Gupta SQL Windows and 'C'. Study and analyze user requirements for RDBMS design and data normalization in the above mentioned application areas. Requires Bachelor's degree in Business Administration with at least six (6) courses in systems and two years experience in job offered or on software design/development and implementation. Either way the two years must include experience in writing of software requirement specifications, program specifications, prototyping, and bench marking. $42,000.00 per year. Qualified applicants submit resume to: Georgia Department of Labor, Job Order #GA5911736, 2943 N. Druid Hills Road, Atlanta, Georgia 30329-3909 or the nearest Department of Labor Field Service Office.

Decision Support Systems Task Leader to supervise 8 Prog/Analysts in development of local & upstream reporting/data mgmt reports for Corps of Engineers Financial Mgmt Systems contract using ORACLE Relational Database Mgmt System & Structured Query Reportwriter on DEC 4360 UNIX platform w/Vistacom & PCTCP providing interface/emulation for PCs. develop user interfaces in SQL*Forms, write programs in C, MICRO-FOCUS ProCobol PL/SQL SQL*Plus Pro*C, write SHELL scripts to automate jobs involving file transfers using TCP/IP & SPX/IPX protocols. $39,600/yr. P.S. M.F. Requires Bachelors/equiv in Computer Sci or Acctg & 2 yrs exp in job offered or 2 yrs exp group w/ORACLE (PL/SQL, SQL/PLUS) including 1 yr exp using SQR for financial/acctg, generating reports for all phases of gov't acctg & using SQL*Forms, UNIX PCs Vistacom PCTCP & TCP/IP or SPX/IPX. Candidates may have Masters Degree/equiv & 1 yr same exp. Must be authorized to work in U.S. Resumes to Marilyn Thomas, AL State Employment Service, 2535 Sparkman Drive, Huntsville, AL 35810-3825. Job Order AL5020852. EEO

Systems Engineer to analyze the company's data processing requirements to plan improvements to data processing system that will provide system capabilities required for projected work loads and planning layout and installation of system modifications and other related duties including trouble shooting dispatching hardware support providing assistance in operating systems application systems telecommunications and data base management implementing new technology using IBM RS 6000 SUN SGI UNIX C C++ 4GL SQL Informix Sybase and GUI Reqs Bachelor's in Computer Science Systems Analysis, Computer Information Systems, Computer Engineering Electrical Engineering, Electronic Engineering Mathematics or its equivalent in ed & exp. Will accept 3 yrs of college ed plus 3 yrs exp in the job offered or in a related occup in lieu of the required ed & exp. 1 yr exp in job offered or 1 yr exp in related occup as Programmer Programmer Analyst Systems Analyst Software Engineer Consultant or Graduate Assistant Must have some related exp including use of each of the following: RS6000 SUN SGI CLONE DETECTOR TRANSACTION MANAGER and FRAUD MANAGER. $50,000/yr 40 hrs./wk. 8a-5p. Send resume to Job Service of Florida, 2312 Gulf To Bay Blvd., P.O. Box C, Clearwater, FL 34618-4090. Re Job order number FL 1326250.

TITLE: Systems Engineer DUTIES: Analyzes data processing requirements to determine electronic data processing system that will provide system capabilities required for projects or workloads and plans layout of new system installation or modification of existing system, utilizing knowledge of electronics and data processing principles and equipment. Confers with data processing and project managerial personnel to obtain data on limitations and capabilities of existing system and capabilities required for project recommend and plan layout for type of computer and peripheral equipment or modifications to existing equipment and system that will provide capability for proposed project or workload. REQUIREMENTS: M.S. degree in Information Systems plus one year experience or one year related experience as Graduate Assistant in University Computer Laboratory. SALARY: $35,000.00 per year. HOURS: 8:30AM to 5:30PM Monday through Friday, 40 hours per week. CONTACT: Georgia Department of Labor, 1535 Atkinson Road, Lawrenceville, Georgia 30243, or the nearest Department of Labor Field Service Office. Job Order # GA 5837082

Computer Programmer Analyze develop implement & enhance parallel application of software on IBM Scalable Powe/ Parallel System 2 (SP2) Implement & install new systems to TCP/IP Network perform network configuration & tech support for users thru System security & admin to ADVANTIS LAN internetworking solutions Min req inc M S in C S will mak exp in above pos or 6 mos exp as Prog or related w/ability to enter prog using C Unix Shell AWK Design & implement software sys e g Database Management & Networking sys 6 mos exp or 1 grad level course in 1) Software Tools Design (Shell, AWK, X-Windows) 2) Computer Languages (Fortran) 3) Modern Network Analysis (TCP/IP) $36,026/yr 9:00-5:00 Please send resume to Georgia Department of Labor, Job Order #GA 5915441, 1535 Atkinson Road, Lawrenceville, GA 30243-5601 or the nearest Dept of Labor Field Service Office

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Perform client specific programming & analysis services for variety of financial & administrative applications in PL/1 & COBOL, using SQL & JCL under DB2 & CICS on IBM mainframes. Application of relational database management systems. 2 years exp in job offered. $43,000/yr, 9-5, M-F, 40 hrs/wk. Mail two copies of resume & copy of ad to: Department of Labor, Licensing and Regulation, 1100 North Eutaw Street, Room #212, Baltimore, MD 21201. Job Order No. 9485455. Job Location: Bethesda, Maryland.

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- Minimum of 8 years direct sales experience working and interfacing with executive levels on large dollar sales transactions
- Must possess sales strategy development, supervisory and leadership competencies
- Experience with sales management in computer industry with large software or health care applications preferred, clinical background preferred

MARKETING EXECUTIVE Req #030

In this highly visible position you will be responsible for developing, executing and managing marketing plans and strategies. You will play a vital role in management of multiple resources. Must be self-motivated and have demonstrated success in achieving results/goals in marketing and sales of technology based software and services. Position requires:

- Undergraduate degree; marketing preferred/master's preferred
- Minimum of 8 years experience in marketing of large dollar sales
- Must possess marketing/sales strategy development, supervisory and leadership competency
- Experience with marketing management and computer industry with large software or health care applications preferred
- Experience with telemarketing and direct mail campaigns preferred

BUSINESS DEVELOPMENT DIRECTOR Req #060

In this position you will be responsible for identifying new products and companies to develop business relationships. Oversees proactive market research programs to maintain understanding of strategic health care organization needs. Position requires:

- Undergraduate degree
- Minimum 6 years experience in business
- Strong marketing, financial, negotiation and contracting skills
- Product rollout/launch experience
- MBA and experience in health care or information technology industries preferred, clinical background preferred

TECHNICAL SALES SUPPORT SPECIALIST Req #001

In this position you will be responsible for assisting in closing direct sales. Maintains the technical competency of the sales team with in-depth product knowledge. Configures technical components of solutions. Position requires:

- Undergraduate degree
- Minimum 6 years experience in a technically related field
- Must be familiar with health care information technology
- Strong supervisory, leadership and presentation skills required, clinical background preferred

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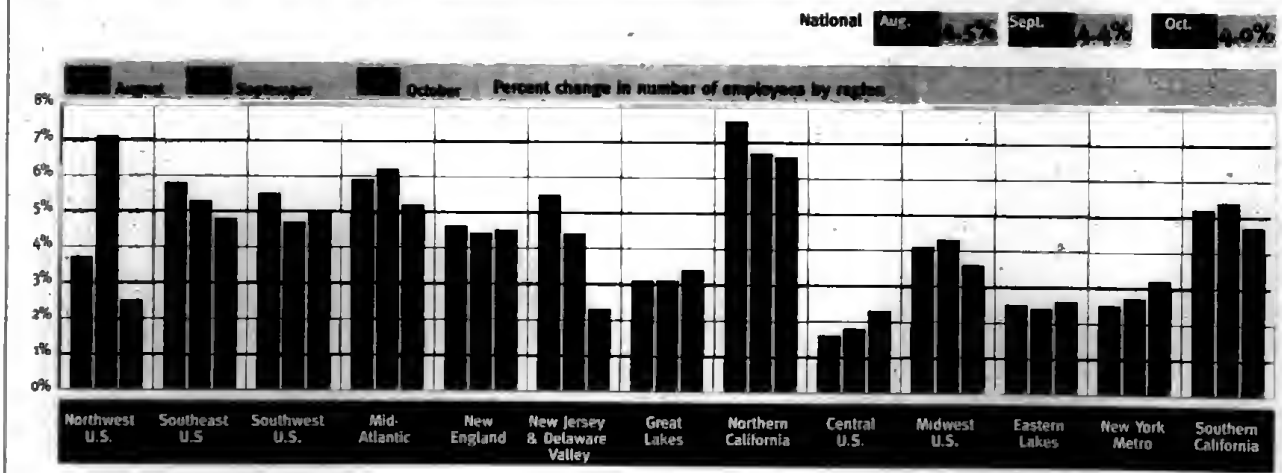
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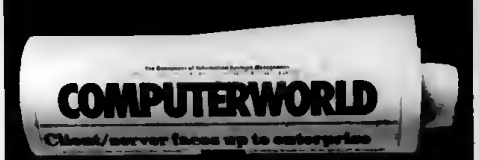
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Marketplace

Smalltalk, C++ knock heads

Users must choose between performance, ease of use

By Alan Radding

Sooner or later, organizations moving to object-oriented technology face the choice: C++ or Smalltalk. These are the dominant object-oriented programming (OOP) languages.

In the religious wars that flare up around this decision, Smalltalk typically commands the moral high ground as the purest OOP language, but C++, an extension of C, holds a substantially larger market share.

Some rapid application development tools promise to deliver object technology without users needing to learn any OOP language. But one, usually C++, is likely lurking just below the surface.

With its roots in C, C++ allows organizations to move into OOP. But it doesn't enforce the object model and, therefore, doesn't force developers to develop OOP applications. This is a strength or a weakness, depending on your commitment to the object model. OOP purists are appalled by the idea of an object language that doesn't enforce the object model, but C programmers view C++ as an incremental step toward objects and have been flocking to it.

In a recent survey of object-oriented database users by First Market Research Corp. in Austin, Texas, C++ adherents outnumbered Smalltalk users 3-to-1 (see CW Guide, page 121).

Smalltalk growing

On the other hand, analysts at International Data Corp. (IDC) in Framingham, Mass., say the Smalltalk market is growing faster than the C++ sector. The Smalltalk market reached $56 million in 1994, a 60% increase over 1993, making it "the fastest-growing OOP language," IDC analyst Steve McClure says.

In the corporate information systems world, most programmers have backgrounds in Cobol, not C. For former Cobol programmers, the choice between C++ and Smalltalk shakes out differently.

"A Cobol programmer will find C++ much more formidable to learn. It uses complex constructs and reverts to special syntax," says Jay Almarode, a senior software engineer at Gemstone Systems, Inc., a Smalltalk object database maker. Smalltalk, he says, is extremely simple. "There are no key words and only a handful of reserved words. The syntax is simple, too," he says.

Often, the choice comes down to ease of use vs. performance. "If you want performance, you choose C++. Smalltalk does more work for you, making it easier to use, but you pay a performance penalty," says Reuben Fisher, a senior technical staff member at Ontos, Inc., a C++ object database vendor in Lowell, Mass.

Smalltalk's performance problems, others charge, are a bad rap. "This comes from the fact that earlier versions of Smalltalk were executed in an interpreted mode. Most runtime applications written in Smalltalk [today] are compiled," McClure says.

C++ vs. Smalltalk feature comparison

FEATURE	C++	SMALLTALK
Enforced object-oriented model	No	Yes
Compiled	Yes	Limited
Dynamic type checking	No	Yes
Class library	Limited	Extensive
Memory management	Manual	Automatic
Syntax	Complex	Simple
Third-party support	Extensive	Limited
Performance	Excellent	Improving
Footprint	Small	Large
Ease of use	Difficult	Simple
Developer productivity	Low/moderate	High

Sources: International Data Corp. and user interviews

Smalltalk programs run slower than those in C++, says Wayne Elias, a senior engineer at systems integrator RWD Technologies, Inc. in Columbia, Md. But, he says, "the performance issue goes away with new hardware."

And Smalltalk lets programmers develop applications more quickly and produce applications that cost less to maintain, so the initial hardware premium pales compared with the cost of developing and maintaining programs in C++, Elias says.

However, where hardware is constrained, C++ is preferred.

In nontechnical areas, C++ holds the edge. Smalltalk programmers are in short supply and command top rates — up to $150 per hour — while C++ programmers are more readily available.

Third-party support

Smalltalk environments also lack the broad third-party support available for C++ environments; C++ users will find more analysis and design tools, object databases and third-party class libraries.

Other differences emerged in IDC's recent survey of OOP developers. C++ respondents were more evenly distributed among all application categories than Smalltalk respondents, who were more concentrated in the information retrieval/decision-support area — that area had 70% more Smalltalk respondents than C++ respondents. In contrast, there were almost three times the number of C++ respondents in the scientific/engineering category. Programmers cited the languages with equal frequency in connection with mission-critical applications.

When the religious wars surrounding C++ and Smalltalk heat up, it is important to keep the big picture in mind. "The big advantages of OOP come from object orientation itself — the ability to model the real world with software constructs that look like the real world — and not from any particular language," Elias says. ■

Radding is a freelance writer in Newton, Mass.

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Contacting CW Editors

CONTACTING US BY PHONE

All editors can be contacted at our main phone number, (508) 879-0700, unless otherwise noted below. Our **24-hour news tip line** is (508) 820-8555. For **subscriptions**, call (800) 669-1002. **back issues**, call (508) 820-8129. **reprints**, call (508) 820-8125.

Our **main fax number** is (508) 875-8931.

CONTACTING US BY E-MAIL

All of our staff members can be reached via E-mail on the **Internet** using the form firstname_lastname@cw.com. IDG news service correspondents can be reached using the form firstname_lastname @idg.com.

Letters to the editor are welcome and should be sent to letters@cw.com. Please include your address and telephone number.

Our **CompuServe** address is 76537,2413 for editorial correspondence only. Direct **subscription** inquiries to CompuServe: 73373,1230.

Respond to our **Talkback** inquiries at talkback@cw.com.

CONTACTING CW EDITORS

We invite our readers to call or write with comments and ideas. It is best to submit ideas to one of the department editors as well as to the appropriate beat reporter.

Editor in Chief Bill Laberis (508) 620-7728
Editor Paul Gillin (508) 620-7724

Department Editors/News

News Editor Marylan Johnson (508) 820-8179
Sections Editor Johanna Ambrosio (508) 820-8553
Assistant News Editor Patricia Keefe (508) 820-8183
Assistant Sections Editor Michael Fitzgerald (508) 820-8206

Senior Editors/News

Government and security news Gary H. Anthes (202) 347-0134
Social and legal news Mitch Betts (202) 347-6718
HP, open systems Jean S. Bozman (415) 548-5511
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Network management Patrick Dryden (817) 924 5485
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Internet/on-line services Kim S. Nash (415) 548-5522
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Databases Dan Richman (360) 379-2665
IBM large systems and software Craig Stedman (508) 820-8120
Management issues Mitch Wagner (415) 548-5513
Internetworking Bob Wallace (508) 620-8234

Senior Writers/News

Mobile computing Mindy Blodgett (508) 820-8168
DEC, mainframe hardware Michael Goldberg (508) 620-7720
Groupware, E-mail Suruchi Manan (415) 548-5535
Imaging, multimedia Tim Ouellette (508) 820-8215
PC hardware Jaikumar Vijayan (508) 820-8220
Telecommunications, Unisys Ned Weinberg (508) 820-8177

Staff Writers/News

New Products Writer Stewart Deck (508) 820-8155

Opinions/Viewpoint

Technical Editor Charles Babcock (415) 548-5521
Viewpoint Editor Mitch Betts (202) 347-6718

Department Editors/Features

Technology Evaluations/CW Guide Dimes Connolly (508) 820-8144

Senior Editors/Features

Management Allan E. Alter (508) 620 7714
In Depth Lary Zottola Dix (508) 820-8236
In Depth Kathleen Gow (508) 820-8236
Careers David B. Weldon (508) 820-8166
Re-engineering/ corporate strategies Joseph Maglitta (508) 820-8192

Associate Editors/Features

CW Guide Cathleen Gagne (508) 620-7729

Research

Bob Fisk, senior research manager (508) 820-8216; Kevin Burden, senior researcher; Laura Hunt, research analyst; Amy Malloy, assistant researcher; Stefanie McCann, graphics coordinator

Special Projects, Supplemental Publications

Publishing Premier 100, Global 100, Best Places to Work, Campus editor, Leadership Series and Salary Survey)
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Copy Desk

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Computerworld Client/Server Journal

Alan Alper, editor (508) 820-8115; Catherine McCreary, managing editor; Mary Brandel, senior editor, Stephanie Faucher, art director; Kimberlee A. Smith, copy editor

IDG News Service Correspondents

Paris bureau chief Marc Ferranti (33) 1-48040 8201
Paris correspondent Cara Cunningham (33) 1-4904 7917
Munich correspondent Torsten Busse (49) 89-811-6057
UK correspondent Ron Condon (44) 181-460-2372
Tokyo correspondent Ben Gurth (81) 33-358-0121
Taipei correspondent Terho Uimonen (886) 02-501-9501 ext 601

Gainers

Percent

Network Computing Devices	53.2	Radius Inc. (L)	18.8
4th Dimension	38.7	Boss Systems (L)	16.2
Boston Chem.	34.7	Tandy Corp.	13.5
Advanced Logic Research	32.7	The Bay Corp (L)	10.7
Apertus Tech.	29.8	Information Resources (L)	10.1
Control Data Systems Inc. (H)	25.7	Software International Inc.	10.2
Interlan Corp.	23.5	Sequoia Systems Inc.	-10.0
Quarterdeck Corp (H)	21.5	Tec Data Systems	-9.7

Dollar

Sun Microsystems Inc. (H)	11.25	Tandy Corp.	-7.00
Netscape Comm. Corp (H)	11.25	Software International Inc.	-3.88
GS Robotics	10.13	Canon Usa	-2.75
Intuit Inc. (H)	10.25	Xerox Corp	-2.50
Ascend Communications (H)	9.50	VLSI Technology	-2.25
Stratacom Inc. (H)	9.00	Xilinx	-2.00
Cisco Systems Inc (H)	8.75	Hadco Computer Systems Corp	-1.38
Adobe Systems Inc.	7.50	Printronix Inc	1.38

An imPerfect world

Many Novell, Inc. (NOVL) investors last week breathed a sigh of relief last week when the Provo, Utah, company announced it will sell the WordPerfect line of applications it acquired 18 months ago. This announcement, combined with September's divestiture of Novell's Unix business to SCO, Inc. (SCOC) and Hewlett-Packard Co. (HWP), trims Novell back down to a networking and network services company, which many market analysts said has been the company's strength all along.

"Novell had failed miserably in WordPerfect personal productivity applications sales, so [the sale] was something they realized they almost had to do," said Chris Galvin, a market analyst at Hambrecht & Quist, Inc. in San Francisco. Looking ahead several months, Galvin said, Novell probably will have two quarters of transition before its focus on networking products begins to pay off.

Novell's growth prospects after the sale look favorable, according to a report by Rich Edwards, an analyst at Robertson, Stephens & Co. in San Francisco. The company's core networking business is growing at a rate of 20%, and management has projected that Novell's information access and management group will grow by 30% to 50% in fiscal 1996, according to the report.

So what becomes of the WordPerfect applications? Several companies that already market competing applications or want to enter this arena have been mentioned as possible suitors. These include desktop application market leader **Microsoft Corp. (MSFT), IBM/Lotus Development Corp. (IBM) and Oracle Corp. (ORCL).** Other companies that may buy the WordPerfect applications to enter this market include **Computer Associates International, Inc. (CA), Symantec Corp. (SYMC), Borland International, Inc. (BORL) and Corel Corp. (COSFF),** according to market sources. *—Stewart Deck*

Gonna wash those apps right out...

Stock prices of Novell and possible WordPerfect suitors before and after Novell's sell-off announcement

Company Name	Closing Price Oct. 27	Closing Price Nov. 1
Novell	14 7/8	16 1/4
Microsoft	100	98 3/8
IBM/Lotus	96 1/2	96 7/8
Computer Associates	54	55 3/4
Symantec	24 3/16	24 1/2
Borland	14	12 5/8
Corel	16 3/8	17 3/4

Exch	52 Week Range		Nov 3	Wk Net	Wk Pct
			3 PM	Change	Change
Computer and Office Equip					**UP 4.6%**
COMS	53.63	19.63	3 COM Corp	50.94	1.61	3.7
AIT	55.00	38.50	AMERITECH Corp (H)	51.63	0.61	1.2
APTS	15.00	6.75	Apertus Tech	10.88	2.50	29.9
T	66.38	47.25	AT&T	63.50	1.75	2.8
ASND	71.25	7.00	Ascend Communications (H)	68.25	9.50	16.7
BNYN	19.75	6.00	Banyan Systems Inc	7.50	0.00	0.0
BNE1	69.75	24.25	Bay Networks Inc (H)	69.38	5.25	8.2
BEL	65.63	48.38	Bell Atlantic Corp (H)	63.63	0.75	1.2
BLS	77.75	50.50	Bell South Corp (H)	77.00	2.38	3.2
BBN	19.38	12.63	Bolt Beranek & Newman	13.63	1.63	5.1
BRK1	22.25	9.75	Brooktrout Technology	20.00	0.75	3.9
CS	84.50	17.38	Cabletron Systems (H)	84.50	7.25	9.4
CGRM	25.13	12.25	Cincinnati Communications	21.38	0.13	0.6
CHPM	51.13	20.00	Chipcom Corp	48.75	0.00	0.0
CSCO	83.75	29.63	Cisco Systems Inc (H)	83.75	8.25	10.9
CLX	11.38	6.13	Compression Labs Inc	7.44	0.44	6.3
CMNT	12.75	4.75	Computer Network Tech	6.75	0.19	2.9
CROS	16.50	8.38	CrossCom	13.00	2.00	18.2
DASW	4.25	2.25	Data Switch Corp	4.44	0.00	0.0
DIGI	64.00	26.88	DSC Communications	19.25	0.50	1.3
FORE	57.25	24.25	FORE Systems Inc (H)	54.75	3.50	6.8
GDE	35.88	9.25	General Datacomm Inds.	15.25	0.25	1.7
GTE	42.13	30.00	GTE Corp (H)	41.38	1.25	3.1
ITT	124.38	77.00	ITT Corp	124.38	4.88	4.1
MCIC	22.13	17.25	MCI Communications Corp	25.75	1.00	4.0
MICM	15.50	5.50	MICOM Communications Corp	8.63	0.25	2.8
MNPI	22.63	8.13	Microcom Inc (H)	21.38	1.50	7.5
NTRX	10.50	3.63	Netrix Corp	6.75	0.25	3.6
NCDI	12.00	3.50	Network Computing Devices	9.00	3.13	53.2
NWK	42.00	19.25	Network Equipment Tech	35.13	2.50	7.7
NETG	46.50	19.75	Network General	42.63	2.88	7.2
NWTH	33.75	7.25	Net Worth Inc (H)	31.75	5.50	18.5
3Com	41.38	25.00	Newbridge Networks Corp	31.63	3.00	10.5
NI	41.00	31.25	Northern Telecom Ltd	36.38	1.75	5.1
NOVL	29.25	13.75	Novell Inc (L)	16.38	2.00	13.8
NYN	48.88	35.88	Nynex Corp	48.88	2.13	4.5
OCTL	42.63	17.75	Octel Communications Corp	13.38	0.13	0.9
ODSI	41.25	9.50	Optical Data Systems Inc	30.00	2.13	7.6
PNRL	8.38	2.13	Penril Data Comm Networks	6.00	0.00	0.0
PCTL	69.50	18.88	Picturetel Corp (H)	69.50	4.75	7.3
PTON	10.75	4.75	Proteon Inc	7.00	0.38	5.1
RACO	7.88	3.00	Racotek Inc	6.00	0.19	2.0
RETX	5.63	2.19	Retix (L)	2.88	0.13	4.6
SFA	24.88	11.38	Scientific Atlanta Inc (L)	13.50	1.00	8.0
SBC	57.00	39.63	Southwestern Bell Corp (H)	56.25	1.50	2.7
FON	38.75	25.88	Sprint Corp (H)	38.50	0.63	1.7
SMSL	31.63	12.50	Standard Microsystems Corp	19.50	0.50	2.6
STRM	67.50	25.25	Stratacom Inc (H)	67.50	9.00	15.6
TBIT	8.13	2.38	Telebit Corp (L)	3.13	0.38	10.7
USRX	100.13	16.75	US Robotics	100.13	11.13	12.5
USW	29.50	17.00	US West Inc	29.50	1.50	4.6
XIRC	71.00	8.88	Xircom (L)	9.50	0.38	3.8
ALGK	72.25	14.13	Kylogics Inc (H)	72.00	4.75	7.1
Personal Computers						**UP 6.9%**
AALR	9.63	3.63	Advanced Logic Research	8.63	2.13	32.7
AAPL	50.13	33.63	Apple Computer Inc	36.38	1.50	4.3
AST	30.13	7.50	AST Research Inc	9.88	0.63	6.8
CPQ	56.75	31.13	Compaq Computer Corp (H)	55.00	1.00	1.8
DELL	47.88	18.38	Dell Computer Corp (H)	47.50	2.69	6.0
GATE	37.19	16.00	Gateway 2000 Inc (H)	17.19	4.31	33.1
HWP	57.88	46.00	Hewlett Packard Co (H)	52.88	1.38	2.5
MUEI	29.88	4.75	Micron International Inc	21.38	0.50	2.4
SGI	45.63	27.50	Silicon Graphics	34.63	1.38	4.1
SUNW	94.63	29.88	Sun Microsystems Inc (H)	84.63	11.25	15.3
TAN	64.38	41.13	Tandy Corp	44.88	7.00	13.5
Large Systems						**UP 2.8%**
AMH	13.63	8.63	Amdahl Corp	9.31	0.19	2.1
CNX	8.13	3.63	Convex Computer	4.50	0.00	0.0
CYR	79.25	34.63	Cray Research Inc	21.75	1.13	5.5
DGN	13.25	6.75	Data General Corp	13.25	1.25	10.4
DEC	56.75	29.38	Digital Equipment Corp (H)	56.75	1.38	2.5
ENCC	4.06	1.00	Encore Computer Corp	1.88	0.13	7.4
NHWK	18.50	10.25	Harris Computer Systems Corp	11.25	1.38	9.4
IBM	114.63	88.88	IBM	100.25	3.88	4.0
MDCO	11.38	3.00	Meridian Data Inc. (H)	9.88	0.13	1.3
BETF	8.88	4.25	Network Frame	6.00	0.25	4.3
SQNT	25.38	14.13	Sequent Computer Sys	17.75	1.88	11.8
SEQS	10.00	3.13	Sequoia Systems Inc	5.63	0.63	10.0
SRA	19.88	13.00	Stratus Computer Inc	31.63	1.13	3.7
TDM	19.75	10.00	Tandem Computers Inc (L)	11.63	0.75	6.9
TRCD	12.13	1.38	TriCord Systems	3.50	0.38	8.7
UIS	13.63	3.50	Unisys Corp (L)	6.50	0.63	10.6
Software						**UP 4.9%**
ADBE	46.50	27.25	Adobe Systems Inc	41.75	2.50	13.8
AMSWA	8.63	2.50	American Software Inc	8.38	0.88	11.7
APLX	33.00	9.79	Applix Inc	29.75	4.00	15.5
ACAD	53.00	30.75	Autodesk Inc	34.25	0.75	2.2
BACH	7.88	2.00	Bachman Info Systems	5.88	0.00	0.0
BGSS	38.25	22.00	BGS Systems Inc (H)	38.25	1.25	3.4
BMCS	51.50	20.50	BMC Software Inc	37.00	0.75	2.1
BOOL	38.25	21.25	Bristol & Babbage (H)	38.00	5.25	16.0
BORL	17.25	6.00	Borland Int'l Inc	13.00	0.75	5.5
BROC	10.63	3.75	Brodia Control Systems Inc	8.31	0.38	4.8
CESH	3.75	1.38	CE Software (L)	1.69	0.06	3.8
CYE	22.00	10.50	Cheyenne Software Inc	21.75	2.63	13.7
COGNF	36.25	12.88	Cognos Inc	33.00	1.13	3.5
CA	56.38	28.75	Computer Associates (H)	54.88	0.75	1.4
CVN	14.38	3.00	Computervision Corp	11.63	0.25	2.1
CPWR	43.00	12.50	Compuware Corp	23.75	2.11	9.8
CSRE	32.38	10.75	Consware Inc	29.00	0.50	1.7
COSFF	19.50	10.13	Corel Corp	16.88	2.38	14.6
CWT1	36.25	9.00	Datawave Technologies Inc	10.88	0.38	3.3
FILE	51.00	23.00	Fresnet Corp	45.25	0.00	0.1
ODOOF	8.25	3.38	4th Dimension	5.38	1.50	38.7
FRAM	33.00	13.75	Frame Technology	28.13	0.00	0.0
FTPS	35.75	20.25	FTP Software Inc	27.50	1.50	5.8
GSOF	26.00	8.75	Group 1 Software	11.75	0.25	2.3
GPTA	11.88	6.63	Gupta (L)	7.38	0.38	5.6
HOGN	12.00	4.63	Hogan Systems Inc	9.63	1.13	13.2
HYSW	56.75	11.25	Hyperion Software Corp	49.75	2.50	5.3
IRIC	19.63	10.75	Information Resources (L)	11.00	1.25	10.2
IFMX	34.38	11.63	Informix Corp	29.63	1.44	5.1
INGR	15.13	7.38	Intergraph Corp	15.13	2.88	23.5
LEAF	11.00	2.88	Intersear Inc	9.63	0.31	3.4
ISLI	14.25	12.63	Interlan Inc	16.63	0.63	3.9
INTU	79.75	29.63	Intuit Inc (H)	79.25	10.75	14.9
LGNT	48.25	26.13	Legent Corp	48.00	0.61	1.3

Exch	52 Week Range			Nov 3 3 PM	Wk Net Change	Wk Pct Change
MGIC	11.50	3.63	Magic Software Enterprises	7.38	0.13	1.7
MANU	18.75	6.75	Manugistics Group Inc	16.50	0.00	0.0
MAPS	40.50	18.75	Mapinfo Corp	21.00	1.25	6.2
MATH	7.38	2.00	MathSoft	5.38	0.13	2.4
MCAF	42.75	9.00	McAfee Associates (H)	42.75	5.75	15.5
MENT	22.88	12.13	Mentor Graphics (H)	21.63	3.50	7.5
MICP	14.63	8.88	Micro Focus (L)	8.88	0.56	6.0
MGXI	13.88	5.13	Micrografx Inc	11.38	0.88	8.3
MSFT	109.25	58.25	Microsoft Corp	99.38	-0.25	-0.3
NETM	27.25	12.25	Netmanage Inc	21.00	2.00	10.5
NSCP	94.50	45.75	Netscape Comm. Corp (H)	94.50	11.25	13.5
ORCL	47.00	24.75	Oracle Corp	46.13	3.38	7.9
PMTC	69.00	31.25	Parametric Technology	69.00	4.00	6.2
PARQ	22.75	7.75	ParcPlace/Systems Inc.	7.50	0.00	0.0
PSFT	94.00	28.50	Peoplesoft	85.25	3.00	3.7
PTEC	14.38	6.13	Phoenix Technologies	12.13	0.50	4.3
PSQL	16.88	4.88	Platinum Software	6.63	0.13	1.9
PLAT	26.00	13.50	Platinum Technology	18.00	0.13	-0.7
PRGS	70.50	29.75	Progress Software Corp	63.00	3.25	5.4
QDEX	26.88	1.94	Quarterdeck Corp (H)	26.88	4.75	21.5
RMBO	26.25	11.75	Rambo Technologies Inc.	21.63	0.38	1.9
ROPS	16.13	2.00	Rasterops	7.44	0.19	2.5
ROSS	7.75	2.19	Ross Systems (L)	3.00	0.50	14.3
SKEY	51.75	18.25	Softkey International Inc	34.13	3.88	10.2
SPCO	6.00	2.88	Software Publishing Corp	3.38	0.00	0.0
SOTA	12.50	6.75	State of the Art	10.88	0.88	8.8
SSW	49.50	29.63	Sterling Software Inc.	45.75	1.13	2.4
SDRC	21.13	4.63	Struct Dynamics Research	18.69	1.31	7.1
SYBS	55.00	19.88	Sybase Inc	38.63	0.38	1.0
SYNC	33.25	15.50	Symantec Corp	24.75	2.00	8.1
SNPS	38.50	19.75	Synopsys (H)	35.75	1.25	3.6
SSAX	45.75	12.25	System Software Assoc.	35.63	3.88	5.6
SYSF	18.13	6.75	Systemsoft Corp	16.38	1.00	6.5
VIEW	24.00	7.88	Viewlogic Systems	10.13	0.13	1.3
VMRE	21.50	6.25	VMare Software Inc. (L)	7.13	-0.25	-3.6
WALK	9.75	4.63	Walker Interactive Systems	6.13	0.00	0.0
WALL	55.50	14.50	Wall Data Inc.	16.50	0.75	4.8
WANG	19.50	9.13	Wang Laboratories Inc	10.50	-0.50	-2.9
Semiconductors						**UP 4.6%**
AMD	39.25	22.38	Advanced Micro Devices	22.88	1.25	5.2
ADI	39.50	20.00	Analog Devices Inc.	32.75	3.25	9.4
ATML	36.75	15.38	Atmel Corp	30.50	0.00	0.0
CHPS	15.88	5.63	Chips and Technologies	10.13	0.63	6.8
CRUS	61.13	10.50	Cirrus Logic	40.63	2.75	-6.3
CY	27.75	10.13	Cypress Semiconductor Corp	18.13	0.50	2.8
DLS	24.88	13.38	Dallas Semiconductor	21.75	0.75	3.6
ISSS	36.75	12.00	Integrated Silicon Systems	31.88	1.00	3.2
INTC	78.38	28.75	Intel Corp.	72.31	4.94	7.3
LSI	62.50	18.25	LSI Logic Corp	47.13	-1.00	-2.1
LSCC	64.00	15.81	Lattice Semiconductor	38.75	1.50	2.6
MU	94.75	19.38	Micron Technology	68.38	1.25	1.8
MOT	82.50	51.50	Motorola Inc	67.75	1.75	2.7
NSM	33.63	16.50	National Semiconductor	24.88	-0.25	-1.0
SERA	28.75	6.63	Sierra Semiconductor	20.50	0.63	3.1
TXN	83.75	42.75	Texas Instruments	66.00	-0.75	-1.1
VLSI	39.13	10.63	VLSI Technology	22.38	2.75	9.1
WWTE	6.88	1.75	Weitek	4.13	0.38	6.3
WDC	22.13	13.13	Western Digital Corp.	15.88	0.13	0.8
XLNX	55.50	28.13	Xilinx	44.25	-2.75	-5.3
ZLG	54.13	37.00	Zilog Inc	35.13	0.13	0.4
Telecom and Telegraph						**UP 4.1%**
APCC	25.88	8.75	American Power Conversion (L)	11.00	0.75	7.3
ADPT	67.25	18.88	Adaptec Inc.	45.88	3.69	8.8
BTEC	22.75	14.75	Banctec Inc.	19.75	0.75	3.9
CBER	13.13	3.38	Cambex Corp	8.38	0.63	7.8
CGN	9.38	3.38	Cognitronics Corp	5.63	0.41	12.3
CNB	19.75	9.00	Conner Peripherals	19.75	1.00	5.3
CREAF	16.25	5.88	Creative Technologies Inc.	13.63	0.00	0.0
RACE	13.13	2.50	Data Race Inc.	4.00	0.13	3.2
DTKM	12.00	6.50	Datakam Corp	8.69	0.19	2.2
EMC	27.38	13.00	EMC Corp	18.50	3.00	19.4
EMLX	28.50	10.88	Emulex Corp	16.13	0.25	1.6
ESCC	23.00	11.25	Evans & Sutherland	20.75	0.75	3.8
EXBT	26.00	10.00	Exabyte	13.13	-0.13	-0.9
ISLF	4.25	1.88	Intelligent Info. Systems	2.63	0.00	0.0
IOMG	30.00	2.88	Iomega Corp	24.50	0.75	3.2
IPI SA	7.88	2.00	IPL Systems Inc	3.81	0.19	5.2
KMAG	24.88	22.25	Komag Inc	81.00	3.25	5.6
MXTR	7.25	3.63	Maxtor Corp	6.11	1.63	34.7
MLNS	11.50	2.88	Microplus Corp	3.88	0.19	5.6
MISI	67.50	13.50	Micro Touch Systems Inc	16.50	2.25	15.8
PEAK	31.75	14.00	Peak Technology Group	26.63	1.81	7.3
PNCL	27.00	8.75	Pinnacle Micro Inc (H)	25.38	1.13	14.0
RTNK	28.75	13.38	Portfolio Inc	16.88	1.38	8.9
AQM	10.50	4.00	QMS Inc	4.00	-0.25	-5.9
QNTM	28.50	13.75	Quantum Corp	18.88	1.38	7.9
RDUS	15.00	3.50	Radius Inc. (L)	3.50	-0.81	-18.8
SEG	69.38	22.88	Seagate Technology	48.75	1.75	3.7
STK	33.75	17.88	Storage Technology	26.38	2.50	10.6
TEK	61.88	31.38	Tektronix Inc.	58.50	-0.13	-0.2
XRX	138.00	90.63	Xerox Corp	130.88	2.50	1.9
Services						**UP 4.6%**
AMSY	28.25	15.00	American Mgmt. Systems (H)	29.13	1.50	5.4
AAC	2.88	0.34	Anacomp Inc (L)	0.38	0.00	0.0
ANLY	35.00	18.00	Analysts Int'l	29.25	0.00	0.0
AUD	73.88	36.75	Auto Data Processing (H)	73.00	-0.13	-0.2
CATP	50.13	16.75	Cambridge Tech. Partners (H)	50.13	3.88	7.6
CEN	47.50	23.00	Cendant Corp	44.25	2.63	6.3
CDO	32.50	19.63	Compdesc Inc.	31.75	0.88	2.8
CHRZ	27.25	8.88	Computer Horizons (H)	22.00	2.75	12.2
CSC	70.25	45.00	Computer Sciences	68.25	2.00	3.0
TSK	37.75	7.50	Computer Task Group (H)	12.38	1.75	16.5
CPU	64.38	11.50	CompUSA Inc.	39.63	0.38	1.0
CDAT	19.00	5.38	Control Data Systems Inc. (H)	15.00	3.06	25.7
EGGS	14.75	6.63	Eggshell Discount Software	7.25	0.19	2.7
GME	49.00	35.00	General Motorse (EDS) (H)	49.00	2.63	5.7
IMAC	15.25	6.88	Imacon Corp	10.13	0.38	3.8
INEL	37.00	7.25	Intelligent Electronics	9.00	0.00	0.0
MSEE	37.25	3.88	Mentor	6.00	-0.38	-5.9
MICA	15.00	8.13	Microbase Inc. (L)	6.38	0.13	1.5
PAYX	67.00	22.25	Paychex	44.75	-0.13	-0.3
PMS	54.25	37.75	Policy Management Sys.	48.00	1.38	2.9
REY	39.25	28.25	Reynolds and Reynolds (H)	37.13	1.75	4.9
SEIC	26.50	18.75	SEI Corp	22.25	0.63	2.8
SMED	62.75	28.75	Shared Medical Systems	39.13	0.00	0.0
SMKR	33.00	4.00	SMS Systemhouse	12.75	0.19	1.5
SSPE	26.50	12.25	Software Spectrum Inc	21.75	0.25	1.2
SNDT	31.25	17.75	Sungard Data Systems	28.25	2.50	9.7

KEY (H) = New annual high reached in period (L) = New annual low reached in period

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Betsy Hearts

Desktop drama

CONTINUED FROM PAGE 1

plications businesses changes it from n $2 billion company that was expected to grow 16% during fiscal 1996 to a $1.5 billion concern that I estimate will increase its revenues by 27% in fiscal 1996," Edwards said.

Novell'n outlook may be rosier, but the current reality for most WordPerfect users is one of fear, uncertainty nnd doubt.

"It destabilizes WordPerfect and the user base. After you've invested n decade in WordPerfect software, it's disheartening to just see it get sold on the cheap," said Mike MacDougall, information resources manager at the Environmental Protection Agency in Boston.

Novell Chief Financial Officer Jim Tolonen said the company is talking with "several prospective buyers and hopes to complete the sale by the end of January." At press time last week, the company still owned the applications group.

Tolonen bluntly stated thnt Novell "hasn't gotten back as much of a return as we'd like, and the WordPerfect business is operating at a loss." Edwards said Novell probably will sell the applications business for less than $400 million, or less than half whnt it paid for WordPerfect just under two years ago.

Selling off the WordPerfect unit is just the intest in n series of technology divestitures at Novell during the past year. Under Chief Executive Officer Robert Frankenberg, the company has been distancing itself. from Noordn's efforts to expand the company's reach and shore up its ability to compete toe-to-toe with archrival Microsoft.

The result will be a trimmer, network-focused Novell, which will leave the npplications mnrket more open for Microsoft.

Feeling pressure

Users such as Dean Johnson, the information delivery manager at Freudenberg-NOK General Partnership, an auto parts manufacturer in Bristol, N.H., are feeling pressured to bow to Microsoft's dominance.

"Until now, we've resisted the notion of installing Microsoft or anyone's complete suite of desktop applications, but it commands 90% market share, and the competition — WordPerfect and Lotus — is getting weaker. Migration to an all-Microsoft suite may be inevitable," Johnson said last week.

Johnson and Ki Wilson, n senior microcomputer analyst nt Stone Container Corp. in Chicago, summed up the feelings of many WordPerfect nsers. They noted that given the absence of any concrete information about a specific buyer, their future desktop plans are in limbo.

"We're very concerned about who will take stewardship [of the software]," Wilson said. "Provo was inte in releasing WordPerfect support for the Windows platform, and that hurt them and Lotus, too. We're left with Microsoft as the lone industry Goliath."

Tolonen sought to assuage such fears. "We will continue to develop and support the WordPerfect product suite and work with the new owner to ensure a smooth transition. That includes the promised support for 32-bit . Windows 95 applications," he stressed.

Tolonen did nckenowledge, however, thnt Novell's divestiture of the WordPerfect desktop npplications software will further delny the nlready inte applications software.

Marshall Senk, n senior analyst at Robertson, Stephens, said while many questions remain about Novell's sale of WordPerfect, he doesn't expect competitors such as Borland International, Inc. or Lotus Development Corp. to pick up much business. "A lot depends on who buys WordPerfect. But the fact remains, Microsoft has 90% market share, and everyone else is fighting for the remaining 10%. So it probably won't mean a big spike in Borland'n or Lotus' sales," Senk said.

New dog, old tricks?

Meet the new Novell. Same as the old?

Not quite. But there is a definite echo of the Novell that existed before it began its spate of acquisitions.

Analysts last week were heartened but cautious about Novell's decision to streamline its efforts and focus on NetWare and networking services such as NetWare Connect and Nested NetWare.

"This may look like the old Novell, but it can't just go back to the good old days circa 1990 when NetWare dominated the market," said Jeff Tarter, editor and publisher of "SoftLetter," a newsletter in Watertown, Mass. "Financially, the company is better off, but it's got a lot of competition from [Microsoft's] Windows NT Server, which is coming on hard and fast, and even from [IBM's] OS/2 Warp Server."

Rich Edwards, a senior analyst at Robertson Stephens Co., a San Francisco investment firm, agreed with many Wall Street analysts that Novell'n decision to sell off the applications business — albeit, for probably n fraction of what it paid for WordPerfect — will help refocus and rejuvenate sales of the core NetWare system. It also will give the emerging network services business a boost, they said.

— Laura DiDio

WordPerfect users spooked; make vow to flee

Others worry about desktop investment

By Cheryl Gerber

Halloween turned into one nasty trick for WordPerfect and PerfectOffice users but will likely deliver some treats for Microsoft Corp.

User confidence in WordPerfect and the PerfectOffice suite dropped to an all-time low last week following Novell, Inc.'s announced intent to sell its WordPerfect application business for a mere quarter of what the company paid for it last year. One obvious beneficiary was Microsoft's Office suite, which many users were eyeing as a stable alternative.

User uproar

WordPerfect and PerfectOffice users interviewed last week universally expressed shock and dismay at the news. Reaction tended to fall into two camps: Some vowed to abandon WordPerfect as soon as possible; others fretted about their long-term investment in the software.

"We have 8,000 to 9,000 copies of WordPerfect. It's our standard word processing environment," said Jon Fullinwider, information systems director for the county of San Diego, Calif. "If we don't get something quickly within the next month, I'll make the decision to move off WordPerfect, and Microsoft Office will be my first consideration.

"Whoever buys this will have to get to the customer community immediately and tell them that they will sustain the enhancements and commit to the Windows 95 environment," Fullinwider added.

Indeed, customer confidence is a key issue. "I've been telling my customers that they can stick with the latest WordPerfect for DOS and save on hardware upgrades for the next few years," said Gary Karasik, president of GK Enterprises, an IS consultancy in Tallahassee, Fla. "But I can't say that anymore in good faith."

A user in Salt Lake City, long loyal to Novell's office npplications, was preparing to bail out last week. "There won't be any future upgrades to our WordPerfect products. From now on, we'll only upgrade Microsoft products," said James Hafen, an analyst/programmer nt MegaHertz Corp., a division of U.S. Robotics in Salt Lake City. "We have to go with a company that's stable and reliable."

PerfectOffice Suite Sell-off

Application/Status:

WordPerfect/Selling
GroupWise/Keeping
Presentations/Selling
QuattroPro/Selling
Envoy/Unsure
InfoCentral/Selling

One nnalyst said be had heard from five large government agencies and electric utilities that use PerfectOffice and plan to switch to Microsoft's Office. "When Novell bought QuattroPro, PerfectOffice users gained confidence in the suite. As they migrated to Windows 95, they had been anticipating n move to PerfectOffice for Windows 95," said Matt Cain, an analyst nt Meta Group, Inc. in Stamford, Conn.

"But now they are very concerned. They are thinking about moving instead to Microsoft Office 95."

Change is hard

But for many, such n switch won't come easily.

"We're in the middle of deploying a mission-critical client/server system. A change would be horrendous on our help desk and support staff," said John McGbee, director of training and support nt the University of California at Los Angeles.

As a result, McGbee said, be may synchronize an operating system and office suite change. "We're looking at moving to Windows 95 in a year and a half, so thnt's when we might do it," he said.



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IBM plans unified development tools

Cobol differences to be eliminated

By Craig Stedman

IBM plans to ship in late 1996 a unified version of its VisualAge desktop development tool that works with a variety of object-oriented languages. That will eliminate differences between existing VisualAge products and a version introduced last week for Cobol development.

VisualAge for Cobol for OS/2 is the main attraction in IBM's long-awaited release of object-enabled Cobol products that free its customers from having to develop on a mainframe. A Cobol Set for AIX tool set was also added for IBM's Unix workstations, although it doesn't include a graphical user interface (GUI) builder, which VisualAge provides.

However, VisualAge for Cobol uses a different GUI builder than IBM includes in its VisualAge products for the Smalltalk and C++ languages. For example, the Cobol version requires users to do native Cobol coding to link various parts of an application, while the others can do that graphically via arrows.

Those differences should be eliminated by the end of next year, said Jon Hemming, market manager for enterprise application development at IBM. VisualAge for Cobol will be extended to AIX and Microsoft Corp.'s Windows NT operating system when the unified version is ready, Hemming said. Identical VisualAge tools should also be available by then for languages such as Basic and PL/1.

Simpler training

Prospective customers at Cobol-oriented shops that are starting to use Smalltalk or C++ said having a common front-end tool across all three languages would greatly simplify programmer training. It would also let applications written in different languages have a common look and feel.

"Common sense tells you to do one thing right instead of having to develop two different GUI builders," said Kevin Cummings, senior technical services analyst at Canada Trust Co.'s offices in London, Ontario. "We don't want two camps. And if you have two in IBM, you'll have two in your shop."

Eye on the Cobol

Fun facts to know and tell about the 36-year-old language

- Lines of production Cobol code in use worldwide: **More than 50 billion**
- Percentage of all code that is written in Cobol: **80%**
- Full-time Cobol programmers worldwide: **More than 2 million**
- Percentage of Cobol programmers who still work at terminals: **40%**
- Projected 1996 market for Cobol development and maintenance: **$3 billion**

Source: International Data Corp., Framingham, Mass.; Gartner Group, Inc., Stamford, Conn.

Canada Trust is beta-testing VisualAge for Cobol for OS/2 and is also using VisualAge for C++. Cummings said he is lobbying IBM to support both graphical and native linkage of parts in the unified GUI builder so programmers can "avoid arrow pollution" on complex applications.

Common interfaces

"Training would be a lot easier" with a common VisualAge across multiple languages, said Carl Gerberich, vice president of information services at Marist College in Poughkeepsie, N.Y. Programmers could switch languages more readily "since at least the interface would be the same," he said.

The object Cobol announcement includes a Cobol for MVS mainframe release, but IBM hopes to shift development to the desktop. The OS/2, AIX and MVS products combine native Cobol with object-oriented extensions such as the ability to create objects compatible with IBM's System Object Model.

Object-oriented programming should improve productivity through reuse of parts, but it wasn't feasible for Marist until IBM added support for objects to its Cobol, Gerberich said. "We have so much existing Cobol programming that I can't throw it away. It's too big of an investment," he said.

More on VisualAge. See page 102.

AT&T sets plan for new unit

Division focuses on multimedia desktop

By Neal Weinberg

With an ambitious multimedia strategy, a new breed of communications server and new product brand, AT&T Corp.'s equipment division is ready to hit the ground running when it becomes an independent company next year.

All it needs now is a name — and enough customer interest to sell its gear.

The division last week offered the first glimpse of its technology strategy since AT&T announced in September it would split up its divisions. Under the Business Works product family name, the unit plans to introduce hardware and software that link customers' data and voice networks into one system that supports multimedia on the desktop.

- Users spontaneously can create point-to-point or multipoint calls.
- Users can add or drop parties while a call is in progress.
- Users can add or drop features, such as video or images, while a call is in progress.
- Multimedia calls can be completed, transferred, forwarded or routed as easily as voice calls.

User interest piqued

Peter Bernstein, president of Infonautics, a consultancy in Ramsey, N.J., said the strategy is interesting, but it is way ahead of the market. The Multimedia Communications Exchange server, the device that bridges the voice and data networks, is "a great product," he said. But "the market for that product is a year or two down the road, except for early adopters."

Bernstein also said the AT&T sales staff will have its hands full persuading companies to move to multimedia.

"I think it will take a lot of customer education" to sell users on the business benefits of desktop videoconferencing, Bernstein said.

David Regan, a voice communications specialist at Michigan Consolidated Gas Co. in Detroit, said AT&T is moving in the right direction in its attempt to hook up LANs with private branch exchange (PBX) phone switching equipment.

But for Regan, multimedia falls into the "nice, but not necessary" category. He said his more immediate need is a way to access voice mail and multiple electronic-mail systems with a single password.

In fact, AT&T said its system assigns one telephone number to a workstation to handle all forms of messaging.

The one beta tester of AT&T's new server said he was "excited about the technology" but wasn't sure his company would pay to deploy multimedia. Chuck Rush, global networking manager at McDonald's Corp. in Oak Brook, Ill., has been using the system to allow teams of engineers at different locations to work together on a restaurant design project.

Switching hubs get more features. See page 73.

Deal with SAS could save Census $60M

By Gary H. Anthes

SUITLAND, MD.

Faced with the requirement to do more with less, the U.S. Bureau of the Census is guiding its two dozen autonomous units to adopt common hardware-independent software procured under enterprise contracts.

Software licensing

Last week, the agency announced a five-year, $10 million contract with SAS Institute, Inc. in Cary, N.C. The deal could save the Census Bureau, whose budget this year is $315 million, as much as $60 million in SAS license fees and millions more in internal support costs over the period, the agency claimed.

The contract gives the bureau carte blanche to use all current and future SAS products on any number of computers of any type — from data center to desktop — anywhere in the U.S.

"We are putting in place vehicles that make it easy for our users to do things in a standardized way," said Arnold A. Jackson, associate director for information technology.

The SAS deal offers the agency a uniform approach to data access, analysis and presentation; a similar agreement with Oracle Corp. provides users a standard for database management, he said. Although the bureau's central information systems office won't mandate use of SAS software by the agency's semi-autonomous units, the units will have a powerful incentive to use SAS because incremental use is now free.

Portability a plus

Robert Bateman, chief of the SAS support branch at the Census Bureau, said the portability of SAS' 40-plus products across major platforms will reduce the agency's long-term costs as it migrates from one kind of hardware to another. "Being able to take a person and walk him up to any hardware and make him productive seems like a common sense thing to do," he said. "But the reality is, it is done in few organizations, private or government."

For years, the Census Bureau relied on Unisys Corp. mainframes and proprietary Digital Equipment Corp. minicomputers to do the bulk of its processing, which includes the decennial census and numerous smaller jobs. But now that is giving way to distributed computing under OpenVMS, Unix, OS/2 and Windows.

"The client/server world grew up kind of topsy-turvy," Jackson said. "So I'm trying to bring some order to put a fence around a lot of wild ponies."

That philosophy might have landed Jackson in hot water just a few years ago, said Robert Dornan, a senior vice president at Federal Sources, Inc. in McLean, Va. He said the government's highest priority in systems procurement once was to ensure equal competition among many vendors.

IBM needs Landry's thirst for technology

Charles Babcock

IBM purchased Lotus, and Jim Manzi resigned 99 days later.

The exit of the egocentric CEO meant little to those of us with a stake in the future of workgroup computing in general and Notes in particular — unless it triggered the departure of Notes developer Ray Ozzie and the other computing visionary resident at the firm, Chief Technology Officer John Landry.

Acquiring a software product without its developers is like acquiring a Patriot missile without its launch crew. To the world, it may seem pointed in the right direction, but down the road, there's a moment of truth when it won't get off the ground.



Lotus' *John Landry*

So far, Ozzie appears committed to Notes. And IBM recently named Landry a senior technology consultant. I called Landry in Cambridge, Mass., the other day to ask him if he had met with his fellow IBM senior technology consultants. He said he hadn't. As a matter of fact, "if there are any others out there, I don't know where they are," he says.

In effect, Landry has talked himself into a position where he can take more of a "Jeffersonian view" of his life. He says plainly that he is working "part-time" for Lotus and IBM, although he won't say how much time that is. "If I'm at home hacking, am I working for them or am I working for myself?" he asks. Some may snicker at the arrangement and say he is being pushed into an honorary — and temporary — position. I doubt it.

Granted, there's little precedent for his position in what is a notoriously well-ordered company. And when he spoke recently at the IBM Academy of Technology, he faced an audience packed with technical credentials. He was introduced as having a bachelor's degree in finance from Babson College, not exactly an MIT-size qualification with which to capture an audience's attention. But when he was done, he had convinced them he really knew technology.



Where others sip technology from a straw, Landry drinks it from a fire hose.

Landry has a burning interest in technology. He is probably one of the most aggressive, smorgasbord consumers of languages, development tools and operating systems.

Several years ago, he drew up a report for the former Adapso, now called the Information Technology Association of America, on the state of fourth-generation languages. He ranged over the field with an intimacy that made you feel he had just set each one aside in order to write the report.

Where others sip technology from a straw, Landry drinks it from a fire hose.

Shortly after the IBM takeover, Chairman Louis V. Gerstner asked Landry to head a team doing a 60-day study of the Internet. IBM has several internet-related projects, but they are disjointed and not linked by any overriding strategy. Landry, fascinated by the 'net, agreed. In his subsequent report, he pointed out that large servers and databases are required for the Internet's future.

The Internet has been constructed as a low-speed file transfer medium for people who now want it to be a high-speed transaction processor, he says.

Some melding of the old mainframe world with the new, wide-open pipeline is going to occur, he says. "The Web creates an unbelievable environment for looking at Notes and transaction processing," he says. And if you are used to working on a joint document electronically with a colleague across the hall, why not across the world via the Internet?

In his new role, he isn't tied to a particular project. He can experiment on his own and take a wider view of trends. Landry says he may even "eventually do some teaching" but acknowledges that he still has operational responsibilities at Lotus. "I'm still involved in development work, particularly the Internet work," he says.

He's likely to remain involved past the next 99-day mark. IBM needs Landry's instincts for changing technology at least as much as he needs a job, and you can look for more internet awareness and more coordinated internet activity in IBM PC software.

Babcock is *Computerworld*'s technical editor. His Internet address is charles_babcock@cw.com.

Inside Lines

Consutlants at werk

You'd figure Gartner Group would have come across a spell checker or two during its various consulting activities. But the crystal-ball gazers apparently didn't give one to the designers of the Gartner home page on the World Wide Web. The text is dotted with some embarrassing misspellings, such as "informaltion," "acquisition," "futore" and "Phillups." And in at least one place, the company's old telephone number is still listed even though it switched to a new one months ago. We're afraid this wouldn't merit a high score for "ability to execute" in Gartner's omnipresent magic-quadrant chart.

Bang, bang, is DOS dead?

Just like Hollywood's favorite undead characters Freddie Kruger and Jason, Microsoft still seems to be having a hard time driving a spike through the heart of MS-DOS. At a Halloween party at the company last week, Chairman Bill Gates appeared in a video dressed as the shotgun-toting protagonist of the Doom video game, ready to shoot it out in a virtual Doomscape. One of the main themes of the party was "DOS is Dead" (for games, that is). But Microsoft officials hesitate to bury the venerable operating system. They say it is premature to decide if there will be a DOS 7. "We'll respond to what our customers want," one executive said.

Cybernumbers game

Everyone's a pollster, and nearly everyone and his brother uses the Internet, if we are to believe the many cybersurveyors out there. CommerceNet and the folks at A. C. Nielsen say 24 million people in the U.S. and Canada cruise the 'net. Yet Forrester Research says the number of consumers on-line won't top 19.5 million until 1998. Another oft-cited figure is 30 million 'net users. "How do we know what they're saying is right?" one user wondered aloud last week. Well, uh, it's like this. We don't.

Plain old TV is just fine

For a new technology that isn't even in full use yet, interactive television already has lost interest among users. According to a recent on-line study by the BBDO New York, interest in interactive television, which promises benefits such as video on demand and on-line banking, is down 15% from last year. The company cited problems with recent trials, such as Time Warner's tests in Orlando, Fla., and the fact that consumers are more cautious about technology hype.

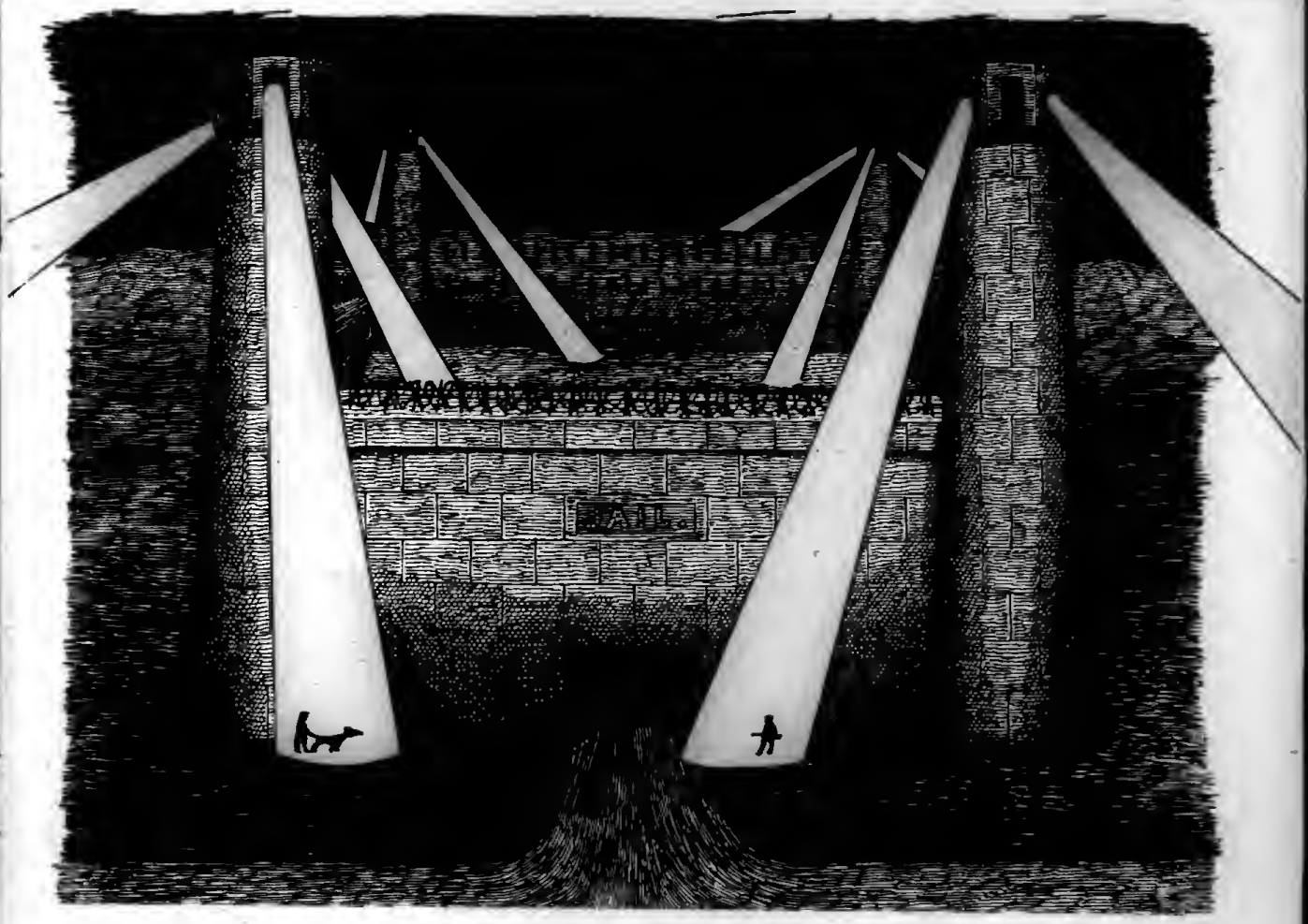
NetWire minders off cruising

Novell downloaded the long-awaited beta of its 32-bit client requester software for Microsoft's Windows 95 on its CompuServe NetWire forums last week. Then most of the company's beleaguered systems operators trekked off on their annual Novell-sponsored cruise to the Bahamas. The 32-bit Windows 95 client beta, which was supposed to have shipped at the end of September, has been the focus of thousands of queries per month. So the systems operators' absence was keenly felt. Not to worry, though — they're back on-line today.

AT&T watchers are waiting with tongue in cheek for the announcement of a new name for the $20 billion equipment unit that will be spun off next year. EquipCo. seems to be the current shorthand inside the company, although Bob's Equipment Co., named for AT&T's Chairman Robert Allen, and NATTA (Not AT&T Anymore) also have been mentioned. If you want to get a name for yourself with a news tip, contact Computerworld *via our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474. News editor Maryfran Johnson can be reached by phone at (508) 820-8179 or via the Internet at maryfran_johnson@cw.com.*

The 5th Wave by Rich Tennant





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